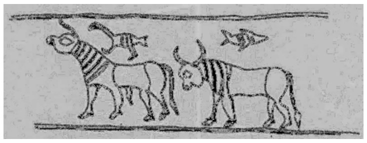
SARASVATI Epigraphs

Volume 7

A zebu bull tied to a post; a bird above. Large painted storage jar discovered in burned rooms at Nausharo, ca. 2600 to 2500 BCE. Cf. Fig. 2.18, J.M. Kenoyer, 1998, Cat. No. 8.



Tell Suleimeh (level IV), Iraq; IM 87798; (al-Gailani Werr, 1983, p. 49 No. 7). A fish over a short-horned bull and a bird over a one-horned bull; cylinder seal impression, (Akkadian to early Old Babylonian). Gypsum. 2.6 cm. Long 1.6 cm. Dia. [Drawing by Larnia Al-Gailani Werr. Cf. Dominique Collon 1987, *First impressions: cylinder seals in the ancient Near East*, London: 143, no. 609]

bharatiyo = a caster of metals; a brazier; bharatar, bharatal, bharatal. = moulded; an article made in a mould; bharata = casting metals in moulds; bharavum = to fill in; to put in; to pour into (G.lex.) **bhart** = a mixed metal of copper and lead; bhart-i_ya_ = a barzier, worker in metal; bhat., bhra_s.t.ra = oven, furnace (Skt.)

Dr. S. Kalyanaraman

Babasaheb (Umakanta Keshav) Apte Smarak Samiti
Bangalore 2003

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

SARASVATI: Epigraphs by S. Kalyanaraman
Copyright ©Dr. S. Kalyanaraman
Publisher: Baba Saheb (Umakanta Keshav) Apte Smarak Samiti, Bangalore

Price: (India) Rs. 500 ; (Other countries) US $50 .

Copies can be obtained from:

S. Kalyanaraman, 3 Temple Avenue, Srinagar Colony, Chennai, Tamilnadu 600015, India
email: kalyan97@yahoo.com
Tel. + 91 44 22350557; Fax 4996380

Baba Saheb (Umakanta Keshav) Apte Smarak Samiti,
Yadava Smriti, 55 First Main Road, Seshadripuram, Bangalore 560020, India
Tel. + 91 80 6655238

Bharatiya Itihasa Sankalana Samiti, Annapurna, 528 C Saniwar Peth, Pune 411030
Tel. +91 020 4490939

Library of Congress cataloguing in publication data

Kalyanaraman, Srinivasan.
Sarasvati/ S. Kalyanaraman

Includes bibliographical references and index
1.River Sarasvati. 2. Indian Civilization. 3. R.gveda

Printed in India at K. Joshi and Co., 1745/2 Sadashivpeth, Near Bikardas Maruti Temple, Pune 411030, Bharat

ISBN 81-901126-7-0
FIRST PUBLISHED: 2003

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

About the Author

Dr. S. Kalyanaraman has a Ph.D. in Public Administration from the University of the Philippines; his graduate degree from Annamalai University was in Statistics and Economics. His PhD dissertation was on development administration, a comparative study of 6 Asian countries, published as *Public Administration in Asia* in 2 volumes.

He was a Senior Executive in the Asian Development Bank, Manila, Philippines for 18 years from 1978 to 1995 responsible for the world-wide IT network of the Bank and disbursements on a portfolio of US$60 million for over 600 projects in 29 developing countries of Asia-Pacific region. Prior to joining the Bank, he was Financial Advisor on the Indian Railways (responsible, as part of a professional team, for introducing computers on the Railways) and Chief Controller of Accounts, Karnataka Electricity Board. He took voluntary retirement from the Bank five years' ahead of schedule and returned to Bharat to devote himself to Sarasvati River researches and development projects. He is well-versed in many languages of Bharat: Tamil, Telugu, Kannada, Hindi, Sanskrit. He has compiled a comparative dictionary for 25 ancient Indian languages, titled *Indian Lexicon*. He has set up a website on Sarasvati River and Civilization with over 30,000 files (http://www.hindunet.org/saraswati); he is the founder of the yahoogroup, IndianCivilization, which has over 800 members (April 2003). His work, *Sarasvati*, was published in 2001 a compendium on the discovery of Vedic River Sarasvati. His present work, the 7-volume enyclopaedic work on *Sarasvati Civilization* published in 2003, is a result of over 20 years of study and research.

He is Director, Sarasvati Nadi Shodh Prakalp, Akhil Bharatiya Itihaasa Sankalana Yojana, Chennai 600015. The Prakalp is engaged in researches related to Sarasvati Civilization and interlinking of national rivers of Bharat. He has contributed to many scholarly journals and participated in and made presentations in a number of national and international conferences including the World Sanskrit Conference held in Bangalore in 1995. He delivered the Keynote address in the International Conference of World Association of Vedic Studies, 3rd Conference held in University of Massachusetts, Dartmouth, in July 2002. kalyan97@yahoo.com

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Diacritical marks used

The Kyoto-Harvard convention is NOT used since the intermingling of English words with Indian language words wll distort the representation of capital letters and is not easy to read.

The standard diacritical marks are deployed but, instead of ligaturing them on top and bottom of the alphabet, the diacritical marks FOLLOW immediately after the vowel or consonant which is modified. For e.g., a_ connotes ‘long a’, n. connotes retroflex N. After the UNICODE is standardized, the next edition will display the modified codes for ease of representation on web pages on the internet.

a rut,*a*t	e b*e*t	d *th*en
a_/ l*aw*	e_ *a*te	d. *d*ot
a~_ l*ong*	e~_ b*an*e	l. riva*lr*y
/a~ *un-*	/e~ wh*en,whey*	n. a*n*d
i it	o *o*bese	n- *n*ew
i_ b*ee*	o_ n*o*te	r- cu*rl*
i~_ b*een*	o~_ b*one*,*one*	r. *r*ug
/i~ *in*	m. mu*m*	r.. (*zsh*)
u y*ou*	n: ki*ng*	s fu*s*e
u_/ *oo*ze	*n~* *ny*et	s. *sh*ut
u~_ b*oon*	h-/k- w*h*at	s' *s*ugar
/u~ j*un*e	c *ch*ange	t bo*th*
	c. *s*o	t. *t*oo

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

List of languages and abbreviations

The languages of the linguistic area and the abbreviations used are as follows:

A.Assamese
Ap.Apabhram.s'a
Ash. Ashkun (As.ku~_--Kafiri)
Aw. Awadhi_
B. Bengali (Ban:gla_)
Bal. Balu_ci_ (Iranian)
Bashg. Bashgali_ (Kafiri)
BCE Before Common Era (BC)
Bel. Belari
Bhoj. Bhojpuri_
Bi. Biha_ri_
Br. Bra_hui_
Brj. Brajbha_s.a_
Bshk. Bashkari_k (Dardic)
Bur.Burushaski
CE Common Era (AD)
Chil. Chili_s (Dardic)
D.. D.uma_ki
Dm. Dame~d.i_ (Kafiri-Dardic)
G. Gujara_ti_
Ga. Gadba
Garh.Gar.hwa_li_
Gau. Gauro (Dardic)
Gaw.Gawar-Bati (Dardic)
Gmb. Gambi_ri_ (Kafiri)
Go. Gondi
Gy. Gypsy or Romani
H. Hindi_
Ir. Irul.a
K. Ka_s'mi_ri_
Ka. Kannad.a
Kaf. Kafiri
Kal. Kalasha (Dardic)
Kand. Kandia (Dardic)
Kat.. Kat.a_rqala_ (Dardic)
Kho. Khowa_r (Dardic)
Khot. Khotanese (Iranian)
Kmd. Ka_mdeshi (Kafiri)
Ko. Kota
Kod.. Kod.agu (Coorg)
Koh. Kohista_ni_ (Dardic)
Kol. Kolami
Kon. Kon:kan.i_
Kond.a
Kor. Koraga
Kt. Kati or Katei (Kafiri)
Ku. Kumauni_
Kui
Kurub.Bet.t.a Kuruba
Kur.Kur.ux (Oraon, Kuru*kh*)
Kuwi
L. Lahnda_
M. Mara_t.hi_
Ma.Malayalam
Mai.Maiya~_ (Dardic)
Malt.Malto
Ma_lw.Ma_lwa_i_
Mand.. Mand.a
Marw.Ma_rwa_r.i_
Md.Maldivian dialect of Sinhalese
MIA Middle Indo-Aryan
Mj. Munji_ (Iranian)
Mth. Maithili_
Mu. Mun.d.a_ri (Munda)
N. Nepa_li
Nahali
Nin:g. Nin:gala_mi (Dardic)
Nk. Naikr.i (dialect of Kolami = LSI, Bhili of Basim; Naiki of Chanda)
OIA Old Indo-Aryan
Or. Or.iya_
P. Punja_bi_ (Paja_bi_)
Pa. Parji
Pali
Pah. Paha_r.i_
Pa_Ku. Pa_lu Kur-umba
Pas'. Pas'ai (Dardic)
Pe. Pengo
Phal. Phalu_r.a (Dardic)
Pkt. Prakrit
S. Sindhi_
Sant. Santa_li_ (Mun.d.a_)
Sh. Shina (S.in.a_.Dardic)
Si. Sinhalese
Sik. Sikalga_ri_ (Mixed Gypsy Language: LSI xi 167)
Skt. Sanskrit
Sv. Savi (Dardic)
Ta.Tamil
Te.Telugu
Tir.Tira_hi_ (Dardic)
To. Toda
Tor.To_rwa_li_ (Dardic)
Tu. Tulu
U. Urdu
Werch.Werchikwa_r or Wershikwa_r (Yasin dialect of Burushaski)
Wg. Waigali_ or Wai-ala_ (Kafiri)
Wkh. Wakhi (Iranian)
Wot..Wot.apu_ri_ (language of Wot.apu_r and Kat.a_rqala_. Dardic)
WPah. West Paha_r.i

Abbreviations used for linguistic categories and other languages

Languages, Epigraphs	etym. etymology

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

As'. As'okan inscriptions
Austro-as. Austro-asiatic (cf. Munda)
BHSkt. Buddhist Hybrid Sanskrit (Franklin Edgerton, Buddhist Hybrid Sanskrit Grammar and Dictionary, Newhaven, 1953)
Dard. Dardic
Dhp. Ga_ndha_ri or Northwest Prakrit (as recorded in the Dharmapada ed. J. Brough, Oxford 1962)
Drav. Dravidian
IA. Indo-aryan
IE. Indo-european
Ind. Indo-aryan of India proper excluding Kafiri and Dardic (as classified by R.L. Turner)
KharI. Kharos.t.hi_ inscriptions; Middle Indo-aryan forms occurring in Corpus Inscriptionum Indicarum Vol. II Pt.I, Calcutta, 1929 MIA Middle Indo-aryan
NiDoc. Language of 'Kharos.t.hi_ Inscriptions discovered by Sir Aurel Stein in Chinese Turkestan' edited by A.M. Boyer, E.J. Rapson, and E. Senart
Ar.Arabic
Aram.Aramaic
Arm.Armenian
Av. Avestan (Iranian)
E. English
Gk. Greek
Goth. Gothic
Ishk. Ishka_shmi_ (Iranian)
Kurd. Kurdish (Iranian)
Lat. Latin
Lith.Lithuanian
OHG. Old High German
Orm. O_rmur.i_ (Iranian)
OSlav. Old Slavonic
Par. Para_ci_ (Iranian)
Pahl. Pahlavi (Iranian)
Pers. Persian (Iranian)

expr.expression
f./fem. feminine
fig. figuratively
fr. from
fut. future
gen. genitive
hon. honorific
id. idem (having the same meaning)
imper.imperative
incl. including
inf.infinitive
inj.injunctive
inscr.inscription
lex. lexicographical works or Kos'as
lit. literature
loc. locative
m. masculine
M Middle
metath. metathesis (of)
N North
Na_ Na_ci Na_t.u usage
Naut. Nautical
nom.nominative
nom.prop. nomen proprium (proper name)
num.numeral(s)
NWNorth-west
O Old
obl. oblique case
onom.onomatopoeic
p. page
part. participle
pass. passive
perf. perfect
perh. perhaps
phonet.phonetically
pl. plural
pp. past participle (passive)
pres. present
pron. pronoun
Pudu. Pudukkottai usage
redup. reduplicated
ref. reference(s)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Port. Portuguese	S South
Pr. Prasun (Kafiri)	sb./subst.substantive
Psht. Pashto (Iranian)	semant. semantically
Tib. Tibetan	st. stem
Toch. Tocharian	subj. subjunctive
Turk. Turkish	syn. synonym
Yid. Yidgha (Iranian)	Tinn. Tinnevelly usage
	Tj. Tanjore usage
Abbreviations : Grammatical	usu. usual(ly)
	vais.n..vais.n.ava usage
* hypothetical	vb. verb
< (is) derived from	viz. videlicet (namely)
> (has) become	W West
? doubtful	
Xinfluenced by	
+ extended by	
~ parallel with	
acc.accusative	
adj. adjective	
adv. adverb	
aor. aorist	
caus. causative	
cent. century	
cf. confer (compare)	
cmpd.compound(ed)	
com. commentary, t.i_ka_	
conj.conjunction	
dat. dative	
dist.fr.distinct from	
du. dual	
E East	
e.g. example	

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Foreword

I had written a foreword for Dr. Kalyanaraman's work titled *Sarasvati* in 2000. As promised, he has now followed up this work with an additional seven volumes to complete the encyclopaedia on Sarasvati – the river, godess and civilization of Bha_rata.

It is a privilege indeed to receive the seven volumes titled:

Sarasvati: Civilization
Sarasvati: R.gveda
Sarasvati: River
Sarasvati: Bharati
Sarasvati: Technology
Sarasvati: Language
Sarasvati: Epigraphs

This septet constitutes a fitting homage to Babasaheb (Uma_ka_nt kes'av) Apte, particularly in the wake of the centenary celebrations planned for 2003 in memory of this patriot who wanted a presentation of the history of Bha_rata from a Bha_rati_ya socio-cultural perspective.

The dream of the late Padmashri Vakankar, archaeologist is also partly fulfilled with the delineation of the peoples' lives over 5,000 years on the banks of the Rivers Sarasvati and Sindhu.

The Sarasvati Nadi Shodh Prakalp which is headed by Dr. Kalyanaraman under the guidance of Shri Haribhau Vaze, All-India Organizing Secretary, Akhila Bharateeya Itihaasa Sankalana Yojana should be complimented for bringing to successful completion this important phase of writing of the history of ancient Bha_rata.

The River Sarasvati has not only been established as ground-truth (bhu_mi satyam), but the vibrant civilization which was nurtured on the banks of this river has been exquisitely unraveled in the five volumes, covering virtually all aspects of the lives of the pitr.-s, many of whose a_s'rama-s are venerated even today in many parts of Bha_rata.

The seven volumes provide a framework for understanding the writing system evolved ca. 5,300 years ago to record the possessions and items traded by metal- and fire-workers, the bharata-s. The language spoken by the people is also becoming clearer, with the existence of a linguistic area on the banks of the two rivers – the substrata and ad-strata lexemes which seem to match the glyphs of inscribed objects are a testimony to this discovery. This calls for a paradigm shift in the study of languages of Bha_rata with particular reference to the essential semantic unity of all the language families, thanks to intense socio-economic and cultural interactions across the length and breadth of Bha_rata.

Hopefully, this work should generate many more research studies of this kind to further study the impact of the civilization on the cultural unity of the nation.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

It is also heartening to note that work has started to revive the Rivr Sarasvati and to interlink the rivers of

the country. This will be a garland presented by the children of the country to Bha_rata Ma_ta_ setting up a network of about 40,000 kms. Of National Waterways which will complement the Railways system to further strengthen the infrastructure facilities and to provide a fillip to development projects in all sectors of the economy.

I understand that Kalyanaraman is now embarking on a project to write the history of Dharma. I wish him all success in his endeavours.

M.N. Pingley

Kaliyugabda 5105. a_s.a_d.ha, Gurupurnima. July 13, 2003 CE.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Publisher's Note

On behalf of Baba Saheb (Umakanta Keshav) Apte Smarak Samiti, it gives me great pleasure to publish the set of seven volumes of the encyclopaedic work of Dr. S. Kalyanaraman with over 4,000 illustrations and impressive documentation.

Sarasvati: Civilization
Sarasvati: R.gveda
Sarasvati: River
Sarasvati: Bharati
Sarasvati: Technology
Sarasvati: Language
Sarasvati: Epigraphs

This is a follow-up of the first work titled *Sarasvati* published in 2000 which focused on the River Sarasvati. These seven additional volumes focus on the language, writing system, technology – archaeo-metallurgy, in particular, the lives of the people who lived between 3500 to 5300 years ago and the importance of this legacy and heritage on the history of Bha_rata.

This compendium has been made possible by the contributions made by scientists and scholars of the country from a variety of disciplines, ranging from geology and glaciology to atomic research and language studies. This comprehensive work on Sarasvati thus constitutes a golden chapter in the work of the Akhila Bharateeya Itihaasa Sankalana Yojana, providing the foundation for future works on subsequent periods of the history of the nation.

A principal objective of the Baba Saheb (Umakanta Keshav) Apte Smarak Samiti is the authenticated study of the history of our nation. For this purpose the Akhila Bharatiya Itihaasa Sankalana Yojana affiliated with the Samiti, has been working with a number of scholars and institutions organizing seminars and conferences and bringing out publications. The Samiti is a non-profit, voluntary organization and is entirely supported by volunteers and philanthropists. I wish to thank all the well-wishers and contributors to the Samiti's work. In particular, I would like to acknowledge with gratitude the contribution made by Shri G. Pulla Reddy, Shri Ramadas Kamath, and Basudeo Ramsisaria Charitable Trust, ICICI, Government of Goa, in enabling this publication. Sincere thanks are due to K. Joshi and Co., and Dr. C.N. Parchure who have undertaken the supervision of the publication.

Plans have been initiated to start a national center to study the history of vanava_si people, to produce an encyclopaedia on the Hindu World and to organize research centers in all states of the country, to publish a series of research volumes on various aspects of the Bharatiya itiha_sa in all languages of Bharat, using multimedia presentations.

Haribhau Vaze

National Organizing Secretary, Akhil Bharatiya Itihaasa Sankalana Yojana and Trustee, Baba Saheb (Umakanta Keshav) Apte Smarak Samiti, Bangalore. Kaliyugabda

5105. a_s.a_d.ha, Gurupurnima. July 13, 2003 CE

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Author's Preface

At the outset, I offer my sincere thanks to Moropant Pingley and Haribhau Vaze for their encouragement and support in pursuing this endeavour.

What can I say which has not already been said by eminent scientists, scholars and thinkers of this great nation? All that I can do is to compile their thoughts and present them as I see fit and as a tribute to the memories of our pitr.-s and ma_tr.-s, our ancestors who have made us what we are and who have given us the *vira_sat* (heritage).

The septet contains the following volumes:

Sarasvati: Civilization
Sarasvati: R.gveda
Sarasvati: River
Sarasvati: Bharati
Sarasvati: Technology
Sarasvati: Language
Sarasvati: Epigraphs

The enduring nature of the culture of the nation has been a source of awe and inspiration for many generations of scholars.

The lives of the r.s.i-s and muni-s who contributed to the solidity of the Bha_rata Ra_s.t.ra is a source of inspiration for generations of students of philosophy, politics, sociology, spiritual studies, economics and culture.

The earlier work, *Sarasvati*, published in 2000 focused on the life-history of River Sarasvati. This set of seven volumes follow-up on this work to present a comprehensive survey of the lives of the people who nurtured a vibrant civilization on the banks of River Sarasvati. They were enterprising people who ventured to the banks of River Sindhu and beyond and had established a network of interactions which extended as far as Mesopotamia in the west and Caspian Sea in the north-west.

The River Sarasvati, flowing over 1,600 kms. from Mt. Kailas (Ma_nasarovar glacier) and tributaries emanating from Har-ki-dun (Svarga_rohin.i or Bandarpunch massifs, Western Garhwal, Uttaranchal), through Kashmir, Uttaranchal, Himachal Pradesh, Punjab, Haryana, Rajasthan, and Gujarat made the region lush with vegetation and provided a highway for interactions extending through the Gulf of Kutch, Gulf of Khambat, the Persian and Arabian Gulfs. The story of this riverine,

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

maritime civilization is the story of an enterprising group of people who were

wonderstruck by the bounties of nature and had organized themselves into a cooperating society to harness the bounties of nature. The Samudra manthanam imagery wherein the asura-s and deva-s cooperate in churning the ocean for its riches is an allegory of this quest for material well-being while strengthening societal bonds.

This march of history is a saga of adventure, a passion for discovery of new materials and new methods of communication using a writing system and communicating orally profound thoughts on the cosmic order in relation to humanity.

The next stop is Dharma: a history of Bharatiya Ethos and Thought.

Dr. S. Kalyanaraman

Former Sr. Executive, Asian Development Bank,

Sarasvati Nadi Shodh Prakalp, 5 Temple Avenue, Chennai 600015, India

Kalyan97@yahoo.com

Kaliyugabda 5105. a_s.a_d.ha, Gurupurnima. July 13, 2003 CE

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Table of contents

	Page
Sarasvati Hieroglyphs: Mlecchita Vikalpa	14
Method to decode sets or categories of inscribed objects	28
Hieroglyph Sign List (After Mahadevan)	68
Discovery sites	78
Writing System:Structure, form and function	81
Speculations on the functions of the script	91
Mlecchita Vikalpa:Minerals, metals and furnaces	99
Tools-of-trade and property possessions of artisans depicted in epigraphs	102
Bastion, *kottala*, trough	112
Smithy, *pasra*	112
Mineral, stone	115
Tin, Pewter	118
Iron, ib	125
Bronze	126
Alloy: brass and bell-metal or bharan	129
Metal ingot, trade	134
Gold, mint	136
An alloy of five metals	138
erka, era, 'copper'	142
Duplicated and paired glyphs	148
Person (woman) seated on a tree branch, a spy, eraka	150
Portable stove of a goldsmith, ban:gala	157
Fire-pit, furnace, kulme	158
Smith, karma_ra	172
Copper work	174
Smelting furnace, bat.i	176
Smelting furnace, kut.hi	182
Goldsmith's tool, saw	202
Standard device	217
Dotted circles	229
Rosetta stones	237
Dotted circles and Standard	259
Double-axe	273
Glyph ligatures	277
Fish and Lizard	289
Standing person glyph	298
Tree Glyph	301
Fish Glyphs	310
Sarasvati Civilization	323
Index	327
End Notes	336

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Sarasvati Hieroglyphs: Mlecchita Vikalpa

A tribute to Bharatiya enterprise and an acknowledgement to scholars

At the outset, a tribute should be paid to many savants who have provided us with enormous resources related to and analyses of the epigraphs of Sarasvati Civilization. These epigraphs are commonly referred to in the context of 'Indus Script'. This work has been made possible by the brilliant contributions made by many scholars who have devoted their lives over the last 180 years to the study of Bharatiya civilization.

The author dedicates this work, which is merely a samhita_, to the scientists and devoted researchers who set in search of the River Sarasvati and succeeded in tracing the course of this Vedic river over a staggering distance of 1600 kms. from Manasaraovar to Somnath and to those scholars who have contributed to a better understanding of the indigenous roots and autochthonous evolution of the civilization.

The samhita_ is merely a tool used to crack the code of the hieroglyphs and to delineate the glosses of an ancient language of Bharat dated to circa 5500 years Before Present.

While claiming that the code of the hieroglyphs has been summarily cracked, without any need for special pleading, the work presents the hieroglyphs which speak for themselves, *rebus*, lexeme by lexeme and glyph by glyph by simply tagging every glyph with a lexeme and its homonym in the ancient languages of Bharat. This provides the framework for delineating the glosses of Mlecchа, the dialect which Vidura and Yudhis.t.hira spoke in the *Maha_bha_rata*.

In the context of the evidence presented in this work of the ground-truth of River Sarasvati which constituted the substratum support for the 'Indus (or more appropriately Bharatiya' Civilization), these epigraphs containing exquisite examples of glyptic art, will be referred to as the Sarasvati Hieroglyphs.

The epigraphs are inscribed on about 4,000 objects which include seals, tablets, copper plates and even weapons themselves. The inscribed objects have been found from over 40 sites spread across a vast area of the civilization extending from Ropar on the banks of River Sutlej across the Persian Gulf to Ur in the Tigris-Euphrates doab of Mesopotamia and from Daimabad on the banks of River Pravara (tributary of River Godavari) across Central Asia and Fergana Valley to Tepe Yahya on the Caspian Sea.

The search for minerals and metals and for inventions of new alloys took Bharatiya from the banks of River Sarasvati, far and wide, establishing contacts with contemporary civilizations of Egypt, Mesopotamia, Europe and perhaps also Thailand (where evidence for early bronze age has been discovered).

It is no mere coincidence that (1) the lexeme **bharatiya** means 'caster of metals' in Gujarati and (2) the name of a script which diffused out of Bharat was called **Brahmi**, another name for Sarasvati, divinity **va_k**, *lingua franca*.

Concordance lists

A number of concordances and sign lists have been compiled, by many scholars, for the 'Indus' script:

Langdon, *Mohenjodaro and the Indus Civilization*, London, 1931, vol. II, pp. 434-55
Gadd and Smith, *Mohenjodaro and the Indus Civilization*, London,1931,, vol. III, Pls. CXIX-CXXIX
Vats, *Excavations at Harappa*, Calcutta, 1940, vol. II, Pls. CV-CXVI
Hunter, G.R., *Scripts of Harappa and Mohenjodaro*, 1934, pp. 203-10
Hunter, G.R., *JRAS*, 1932, pp. 491-503
Dani, A.H., *Indian Palaeography*, 1963, Pls. I-II

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Parpola et al., *Materials for the study of the Indus script, I: A concordance to the Indus Inscriptions*, 1973, pp. xxii-xxvi
Mahadevan, I., *The Indus Script: Texts, concordance and tables*, Delhi, 1977, pp. 32-35
Koskenniemi, Kimmo and Asko Parpola, *Corpus of texts in the Indus script*, Helsinki, 1979; *A concordance to the texts in the Indus script*, Helsinki, 1982
Parpola, Asko, *Deciphering the Indus Script*, London, 1994, pp.70-78

Corpus of Indus Seals and Inscriptions Volumes 1 and 2

An outstanding contribution to the study of the script problem is the publication of the Corpus of Indus Seals and Inscriptions (CISI) Two volumes have been published so far:

Corpus of Indus Seals and Inscriptions, 1. Collections in India, Helsinki, 1987 (eds. Jagat Pati Joshi and Asko Parpola)
Corpus of Indus Seals and Inscriptions, 2. Collections in Pakistan, Helsinki, 1991 (eds. Sayid Ghulam Mustafa Shah and Asko Parpola)
[A third volume containing other collections outside India and Pakistan is yet to appear (2003).]

These volumes co-authored by Asko Parpola constitute the photographic corpus. The CISI contains all the seals including those without any inscriptions, for e.g. those with the geometrical motif called the 'svastika'.
Parpola's initial corpus (1973) included a total number of 3204 texts. After compiling the pictorial corpus, Parpola notes that there are approximately 3700 legible inscriptions (including 1400 duplicate inscriptions, i.e. with repeated texts). Both the concordances of Parpola and Mahadevan complement each other because of the sort sequence adopted. Parpola's concordance was sorted according to the sign following the indexed sign. Mahadevan's concordance was sorted according to the sign preceding the indexed sign. The latter sort ordering helps in delineating signs which occur in final position.

Bibliographies of decipherment attempts

There have been over 100 claims of decipherment (2001). The general consensus of research scholars is that none of the claims can be deemed to have succeeded. The reasons generally adduced for treating all of them as failed attempts is that there is no rosetta stone to validate the decipherment. (Rosetta stone was a multilingual epigraph which provided a proof for the successful decipherment of Egyptian hieroglyphs).

This work presents some rosetta stones (over 8000 clusters of lexemes from all languages of Bharat and some epigraphs, with comparable hieroglyphs, on inscribed objects of neighbouring civilizations) and also provides a method for cracking the code of hieroglyphs of the civilization.

The method is, as in the case of Egyptian hieroglyphs, rebus. The hieroglyphs are read as rebus lexemes. All the hieroglyphs are read in the context of the work of the braziers who created the epigraphs. The 'script' is not syllabic, not alphabetic, but lexemic.

The reliability of the code used for hieroglyphs will be tested for almost all the 4000 inscribed objects. The language of the civilization is Mleccha and the code has been described as
Mlecchita Vikalpa in Bharatiya tradition. Mlecchita Vikalpa (Cypher writing) is listed as one of the 64 arts. Mleccha is a dialect spoken by Vidura and Yudhis.t.hira in the *Maha_bha_rata*.

The consistency with which the hieroglyphs can be explained as the tools-of-trade of braziers and metal-, fire-workers of Bharat will stand the tests needed for any sucessful decipherment claim. No special pleading is advanced. The hieroglyphs will speak for themselves as the lexemes of Mleccha unfold as a legacy of Bharatiya language repertoire.

A remarkable conclusion emerges. Mleccha was the substratum which can explain the dialectical continuum of Bharat, for glosses in the dialects of Munda, Dravidian and Indo-Aryan. This declares a paradigm change in

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

language studies. The languages of Bharat circa 5500 years Before Present constituted a linguistic area with a semantic unity consistent with the cultural unity of the nation from Manasarovar to Kanyakumari and from Somnath to Gauhati, along 7500 km. long coastline and along the foot-hills of Himalayan ranges which stretch from Teheran (Iran) to Hanoi (Vietnam).

A comprehensive bibliography appears in Parpola, *Deciphering the Indus Script*, London, 1994, pp. 303-348.

Compendia of the efforts made since the discovery by Gen. Alexander Cunningham, in 1875, of the first known Indus seal (British Museum 1892-12-10, 1), to decipher the script appear in the following references:

Kalyanaraman, S., *Indus Script: A bibliography,* Manila, 1988
Mahadevan, I., *What do we know about the Indus Script? Neti neti ('Not this nor that'),* Presidential Address, section 5, Indian History Congress, 49th Session, Dharwar, 2-4 November 1988, Madras..
Possehl, Gregory, *Indus Age: the writing system,* Delhi, 1996
Richard Meadow and Jonathan Mark Kenoyer, 1997, Excavations at Harappa 1994-1995: new perspectives on the Indus script, craft activities, and city organization, in: Raymond Allchin and Bridget Allchin, 1997, *South Asian Archaeology 1995,* Oxford and IBH Publishing, pp. 157-163.

A corpus of Sarasvati Hieroglyphs

Based on these resources and from the collections of inscribed objects held in many museums of the world, such as the Metropolitan Museum of Art, the corpus of Sarasvati epigraphs includig lists of Sarasvati hieroglyphs, has been made comprehensive to include almost all facets of glyptic art of Sarasvati Civilization. The corpus also includes texts of inscriptions, corresponding to the epigraphs inscribed on objects. The compilation is based mostly on published photographs in archaeological reports right from the days of Alexander Cunningham who discovered a seal at Harappa in 1875, of Langdon at Mohenjodaro (1931) and of Madhu Swarup Vats at Harappa (1940). The corpus includes objects collected in Bha_rata, Pakistan, other countries and the finds of the excavations at Harappa by Kenoyer and Meadow during the season 1994-1995.

Framework for decoding epigraphs of Sarasvati Sindhu Civilization

This is also intended to serve as a pictorial and text index to Mahadevan Concordance and to the two volumes published so far of pictorial corpus of Parpola et al.

Texts are indexed to the text numbers of Mahadevan concordance. The choice of this concordance is based on four factors: (a) the concordance is priced at a reasonable cost; (b) it is a true concordance for every sign of the corpus to facilitate an analysis of the frequency of occurrence of a sign and the context of other sign clusters/sequences in relation to a sign and for researchers to cross-check on the basic references for the inscribed objects; (c) the exquisite nature of orthography is notable and 'readings' are authentic, even for very difficult to read inscriptions; and (d) signs and variants of signs have been delineated with cross-references to selected text readings.

Mahadevan concordance excludes inscribed objects which do not contain 'texts'; for example, this concordance excludes about 50 seals inscribed with the 'svastika_' pictorial motif and a pectoral which contains the pictorial motif of a one-horned bull with a device in front and an over-flowing pot. Parpola concordance has been used to present such objects which also contain valuable orthographic data which may assist in decoding the inscriptions. Many broken objects are also contained in Parpola concordance which are useful, in many cases, to count the number of objects with specific 'field symbols', a count which also provides some valuable clues to support the decoding of the messages conveyed by the 'field symbols' which dominate the object space.

Cross-references to excavation numbers, publications, photographs and the museum numbers based on which these texts have been compiled are provided in Appendix V: List of Inscribed Objects (pages 818 to 829) in Iravatham Mahadevan, 1977, *The Indus Script: Texts, Concordance and Tables,* Memoirs of the

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Archaeological Survey of India No. 77, New Delhi, Archaeological Survey of India, Rs. 250. In most cases, these text numbers are matched with the inscribed objects after Asko Parpola concordance [Two volumes: Rs. 21,000: 1. Jagat Pati Joshi and Asko Parpola, eds., 1987, *Corpus of Indus Seals and Inscriptions: 1. Collections in India*, Memoirs of the Archaeological Survey of India No. 86, Helsinki, Suomalainen Tiedeakatemia; 2. Sayid Ghulam Mustafa Shah and Asko Parpola, eds., 1991, *Corpus of Indus Seals and Inscriptions: 2. Collections in Pakistan*, Memoirs of the Department of Archaeology and Museums, Govt. of Pakistan, Vol. 5, Helsinki, Suomalainen Tiedeakatemia]. *Memoir of ASI No. 96 Corpus of Indus Seals and Inscriptions, Vol. II* by Asko Parpola, B.M. Pande and Petterikoskikallio (containing copper tablets) is in press (December 2001).

The debt owed to Shri Iravatham Mahadevan, Dr. Asko Parpola, Archaeological Survey of India, Department of Archaeology and Museums, Govt. of Pakistan and Finnish Academy for making this presentation possible is gratefully acknowledged. I am grateful to Iravatham Mahadevan who made available to me his annotated personal copy of a document which helped in collating the texts with the pictures of inscribed objects. [Kimmo Koskenniemi and Asko Parpola, 1980, Cross references to Mahadevan 1977 in: *Documentation and Duplicates of the Texts in the Indus Script, Helsinki*, pp. 26-32].

Abbreviations and references to hieroglyphs and text transcripts

m-Mohenjodaro
h-Harappa

ABCDE at the end of a reference number indicate side numbers of an inscribed object. Multiple seal impressions on the same object are numbered 1 to 4.

At the end of the reference number:

'a' sealing; 'bangle' inscription on bangle or bangle fragment; other objects: shell, ivory stick, ivory plaque, ivory cube, faience ornament, steatite ornament; 'ct' copper tablet; 'Pict-' Pictorial motifs (0 to 145) described as illustrations of field-symbols in Appendix III of Mahadevan corpus (pp. 793 to 813); 'it' inscribed tablet; 'si' seal impression; 't' tablet

Illegible inscribed objects are excluded in the following tabulations. Many potsherds Rahmandheri and Nausharo are excluded since the 'signs' are considered to be potters' marks; only those inscriptions which appear to have parallels of field symbols or 'signs' in the corpus are included.

Pitfalls of normalising orthography of some glyphs

Parpola (1994) identifies 386 (+12?) signs (or graphemes) and their variant forms. Mahadevan (1977) identifies 419 graphemes; out of these 179 graphemes have variants totalling 641 forms. [See Sign List and Variants].

Parpola observes: "…the grapheme count might be as low as 350…The total range of signs once present in the Indus script is certain to have been greater than is observable now, for new signs have kept turning up in new inscriptions. The rate of discovery has been fairly low, though, and the new signs have more often been ligatures of two or more signs already known as separate graphemes than entirely new signs." (Parpola, 1994, p. 79)

As earlier discussed, many 'signs' are ligatures of two or more 'signs'.

In the process of normalizing the orthography of some glyphs to identify the core 'signs' of the script, some information is lost and at times, the process itself impedes the possibility of decoding the writing system. This can be demonstrated by (1) the 'identification' of a 'squirrel' glyph and (2) the failure to identify 'dotted circle' or 'stars' as glyphs.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

It is, therefore, necessary to view the inscribed object as a composite message composed of glyphs: pictorial motifs and signs alike.

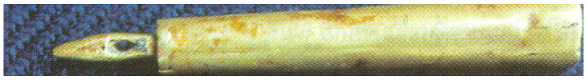
Duplicate epigraphs

Though the corpus is limited, it is surprising that there is a substantial number of duplicate inscriptions; this has become apparent from the recent report of excavations at Harappa (1993 to 1995 seasons). Obviously, the inscriptions do not represent not 'names' of owners. The inscriptions could simply be 'functions' performed by or the 'professional title' of the person who carried the inscribed object on his wrist (or as a pendant attached to a necklace) or the list of objects he/she was invoicing for trade (as bill of lading) or to list possessions of property items listed).

This hypothesis gets re-inforced by (1) the finds of inscriptions on copper tablets (again, with many duplicates – all apparently made by a metal-worker and hence may relate to metal objects produced, say, in an armoury); and (2) the presence of over 200 inscribed objects with no sign (only pictorial motif) or just one or two signs. [The signs could hardly have been alphabets or syllables since there are not many 'names' attested in the historical periods with just one or two syllables.]

In the Bharatiya tradition, the use of copper plate inscriptions served the purpose of recording property transactions, listing possessions of property items.

'Fish' glyph on gold pendant



A fish sign, preceded by seven short numeral strokes, also appears on a gold pendant: Golden pendant with inscription from jewelry hoard at Mohenjo-daro. Drawing of inscription that encircles the gold ornament. Needle-like pendant with cylindrical body. Two other examples, one with a different series of incised signs were found together. The pendant is made from a hollow cylinder with soldered ends and perforated point. Museum No. MM 1374.50.271; Marshall 1931: 521, pl. CLI, B3. [After Fig. 4.17a, b in: JM Kenoyer, 1998, p. 196].

kanac konoc, kana kona, kana kuni 'the corners, in the corners' (Santali)

Line 1: read from right: **kanac** (corner); rebus: **kan~cu** (bronze) or **kana** (kan- 'copper'); two short linear strokes (**kin** 'two'); rebus: **gina** 'metal vessel'.

Two short linear strokes is a dominant glyph which is depicted as a superscript to the 'diamond' glyph and also to the 'nave of spoked wheel' glyph.

The man:gal.asu_tra worn by many married women in Bharat carry glyphs on the pendants, not unlike the glyphs on the Sarasvati epigraphs. The gold pendant discovered at Mohenjodaro could be such a man:gal.asu_tra (ta_li) conveying stri_dhana or possessions of the bride as she came into the bride's household.

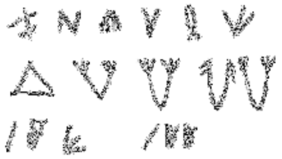
Thus, it can be surmised that the sign which precedes the " glyph may be either a metal or related to the processes of fire-work by metallurgists:

'diamond' glyph connotes 'bronze' metal;
the 'nave of spoked wheel' glyph connotes 'copper' metal.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

That this sign (spoked-wheel) occurs with two-short strokes (barea, two) and ligatured with an arch on zebu seals and on inscribed weapon provides a concordance on the general tenor of the message conveyed by the Dholavira sign-board: the workshop of a turner, kut.ha_ru, armourer, turner who can carve into metal. {If the circle with spokes and a nave is era(ka) [copper metal], the two linear strokes may connote kin = two; rebus: gina = metal vessel [Alternative: barea (two) = rebus homonym, bar.ea = blacksmith, i.e. copper-smith.]}

adar = splinter (Santali); rebus: **adaru** = native metal (Ka.)



Alternative: **kin** = two (Santali); rebus: **gina** = metal vessel (Kond.a) Alternative: bar, barea = two (Santali.lex.).

Meaningful set of signs to keep track of goods

Early potters' marks from Rehman Dheri ca. 3500-2600 BCE [After Durrani et al. 1995].

Early script from Harappa, ca. 3300-2600 BCE. [After Fig. 4.3 in JM Kenoyer, 1998].

Chronology and Contacts: Writing begins circa 3500 BCE

"• ca. 6500–2600 BCE Early Neolithic communities are gradually linked in extensive trading networks across the Sarasvati Sindhu Valley region. The period is characterized by the elaboration of ceramics, the beginning of s'ankha (turbinella pyrum) industry (Nausharo, 6500 BCE), copper metallurgy, stone bead making, and seal carving. The beginning of writing is seen in the form of graffiti on pottery from circa 3500 BCE. A more complicated writing system seems to have developed out of or in conjunction with this pottery-marking system; examples exist from around 2800 BCE.

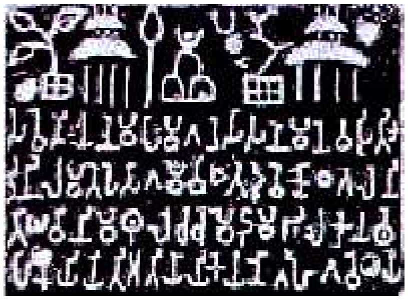
• ca. 2600–1400 BCE An integrated urban culture flourishes in the northwest, producing large-scale settlements with advanced grid-pattern urban planning and an abundance of material remains, including terracotta, metal, stone sculpture, seals, and coins. Large cities such as Mohenjo Daro and Harappa in present-day Pakistan prosper through trade with cultures to the west, and smaller settlements expand through the plains of present-day Pakistan and Northern Bharat. Numerous seals, some copper plates and a few weapons have been found featuring a complex writing system. A seal was found in Daimabad (1400 BCE) with the unique glyph of a rimmed, short-necked jar. Some images on these seals—of bulls, horned headdresses, and figures seated in yoga-like postures—possibly relate to later cultural and spiritual developments in Bharat and use of copper plate inscriptions for recording property/economic transactions.

Anthropomorph, ca. 1500 B.C. India, Uttar Pradesh Copper; 8 1/4 x 11 9/16 in. (21 x 29.3 cm) "In India, find spots for ancient copper objects are located primarily in the basin of the Ganges River in modern-day Uttar Pradesh. The hoards, which contained celts, harpoons, rings, and figural sculptures loosely identified as anthropomorphs, date to a period of Indian history about which little is known. Although it is now generally assumed that these copper objects were made by indigenous people living in the area, the function and meaning of the objects remain unclear. Made from molds and then embellished with hammering, anthropomorphs are characterized by semicircular heads resting directly upon the shoulders, volutelike arms held akimbo, and pointed open legs."• ca. 1900–1300 B.C. The "Late Harappan" period is characterized by the breakdown of the previously integrated culture of the Indus Valley region into small, localized groups. This period coincides with the development and spread of the Indo-Gangetic tradition, from circa 1900 to 800 B.C."

http://www.metmuseum.org/toah/ht/02/ssa/ht02ssa.htm

Bharatiya tradition of copper plate inscriptions

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



Some glyphs on line 1: **kut.hi** = tree; rebus: **kut.hi** = smelting furnace; **kos.t.ha_ga_ra** = storehouse; **s'u_la** = spear; **cu_l.a** = kiln; **kan.d.kanka** = rim of jar; rebus: copper furnace; **bat.a** = quail; rebus: kiln.

The Sohgaura copper plate refers to a pair of kos.t.ha_ga_ra (dva_ra kot.t.haka); the two storehouses described as tri-garbha (i.e. having three rooms) are illustrated on line 1. (Fleet, *JRAS*, 1907). The illustrations indicate that the three rooms are in three storeys, with supporting pillars clearly seen. The inscription refers to the junction of three highways named Manavati, in two villages called Dasilimita and Usagama. The storehouses were made at this junction for the goods of people using the highways, which are indicated in line 3 by mentioning the three places to and from which they led. One of the names give is reognized by Fleet as Chanchu. (Fleet, *JRAS*, 63, 1894 proceedings, 86, plate, IA 25. 262; cf. Sohgaura copper plate/B.M. Barua. *The Indian Historical Quarterly,* ed. Narendra Nath Law. Reprint. 41)

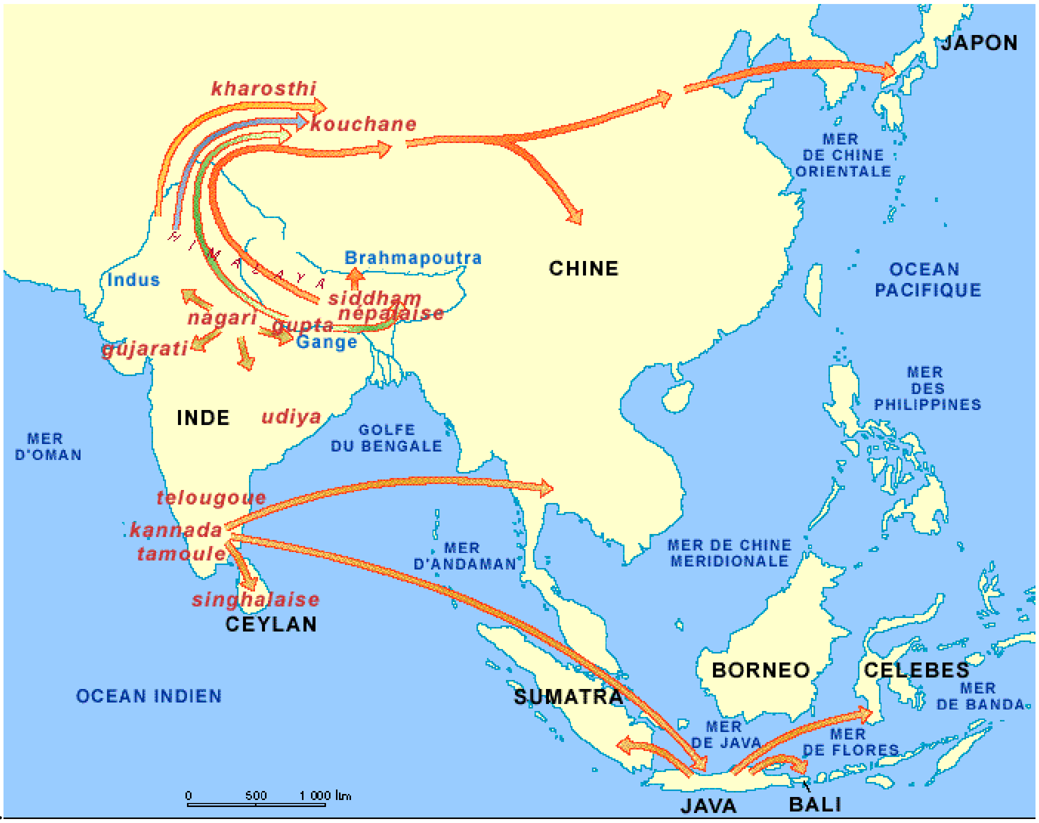
Origin of Brahmi script

There is evidence for the diffusion of scripts from Bharat to eastern parts of Asia, during the historical periods. Researches on the origins of early scripts of Bharat are ongoing and there is no consensus on the origins of Brahmi, while there is agreement that the use of Brahmi is dated to 5th century BCE. There are some scholars who argue that Brahmi was an invention in Bharat, based primarily on the syllabic nature of the script and the inconsistencies in the formation of glyphs for aspirate consonants.

"Several recent publications have questioned prevailing doctrines and offered new views on the antiquity of writing in early India and on the source and early development of the Indian scripts (Brâhmî and Kharo.s.thî). Most of the new studies agree in assigning the origin of these scripts to a later period, i.e. the early Mauryan era (late 4th- mid 3rd centuries BC), than has generally been done in the past, and in deriving them from prototypes in Semitic or Semitic-derived scripts. The main works to be evaluated here are Oskar von Hinüber's *Der Beginn der Schrift und frühe Schriftlichkeit in Indien* and Harry Falk's *Schrift im alten Indien. Ein Forschungsbericht mit Anmerkungen* . Also discussed are two recent articles on similar topics, Gérard Fussman's "Les premiers systèmes d'écriture en Inde" and Kenneth R. Norman's "The Development of Writing in India and its Effect upon the Pâli Canon," as well as some other relevant publications. The authority and significance of this new trend toward assigning a late date of origin for the Indian scripts is evaluated and placed in the context of broader historical and cultural issues... Bühler argued for an early origin of writing in India and posited an extensive pre-history, going as far back as the 8th century BC, for the Brâhmî script, which he derived from the Phoenician script... In general, some form or other of Bühler's essential thesis that Brâhmî was developed out of a Semitic prototype in pre-Mauryan India has been accepted by most scholars in the west, but rejected by the majority of South Asian experts, who generally argue for a separate and indigenous origin for the Indic scripts, often by way of derivation, direct or indirect, from the Indus script. . Kenneth R. Norman's article on "The Development of Writing in India and its Effect upon the Pâli Canon" follows a more traditional path. He analyzes certain patterns of textual variation in Pali texts (e.g. *hatthivattika* / *hattivatika* , pp.239--40, and *samaya* / *samâja* , p.241) which seem to reflect an early redaction in a script which did not represent geminate consonants or differentiate vowel length, and identifies this script as an early prototype of Brâhmî used in Magadha in pre-Mauryan times (p.243). Norman finds it "difficult to accept that Brâhmî was devised as a single complete writing system at one and the same time during the reign of Candragupta" (p.245), and considers it "even less likely that Brâhmî was invented at the time of Ashoka for the specific purpose of writing his inscriptions... there is no concrete evidence that the writing referred to by observers such as Nearchos and Pâ.nini in northwestern India in and around the 4th century was Aramaic, rather than Indian, i.e. Kharo.s.thî; here von Hinüber (quoted above) has wisely left the door open by allowing for the possibility of a "very early form" of Kharo.s.thî..." (p.246)... Still, we should not fall into the trap of thinking that the last word has been spoken. Admittedly, it hardly seems likely, after all the years of waiting, searching, and the dashing of false hopes, that some major archaeological discovery will reveal a whole new picture of the origins of writing in the Indian heartland, or reveal a sustainable (rather than purely hypothetical) connection with the Indus script. Nevertheless, it would be unwise to rule out surprises in the future, and we

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

should leave the door open, as does Falk (p.340), to discoveries that could revive theories of an early development of Brâhmî. But we must also agree, if reluctantly, with his final sentence: "Zur Zeit erscheint dieser Fall jedoch kaum zu erwarten" (p.340)."(Richard Salomon, On the origin of the early Indian Scripts: A review article, *Journal of the American Oriental Society* 115.2 (1995), 271-279).



Diffusion of scripts from Bharat

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Bharatiya tradition of glyphs on punch-marked coins

Pre-mauryan punch-marked coins

Punch-marked coins from 5th cent. BCE, from many parts of Bharat, depict many glyphs, many of which are comparable to the glyphs depicted on inscribed objects of the Sarasvati Sindhu Civilization.

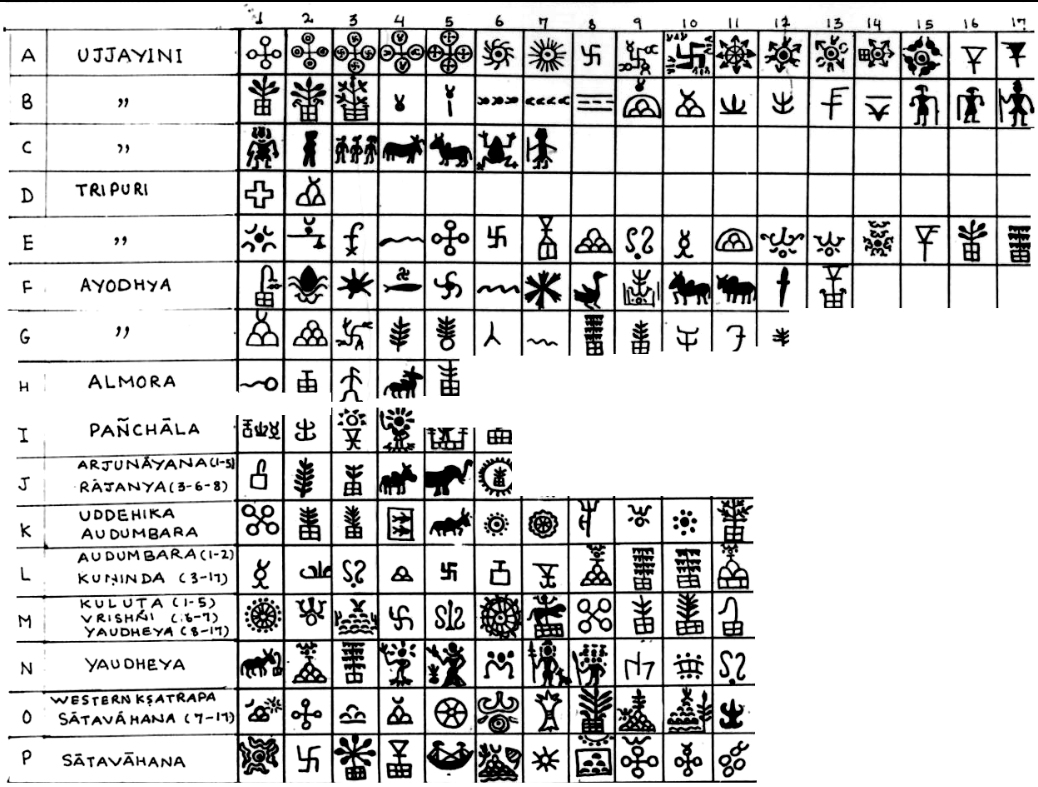
As the hieroglyphic code unravels, the meaning of the glyphs and their importance in the context of the lives of braziers is reinforced. Many glyphs are property possessions of lapidaries and metallurgists and evoke the tools of trade – furnaces, minerals and metals -- used in the smithy.

It is hypothesised that the inscriptions on copper plates and the symbols on punch-marked coins are the work of inheritors of the Sarasvati brazier-tradition.

This cultural tradition explains why copper plates are used for property transactions during the historical periods and also explains why many symbols on punch-marked coins are directly comparable with the Sarasvati hieroglyphs.

This is the most emphatic evidence for discerning the cultural continuity into historical periods of the tradition whose roots are to be found on the banks of River Sarasvati, dating back to 5,500 years Before Present.

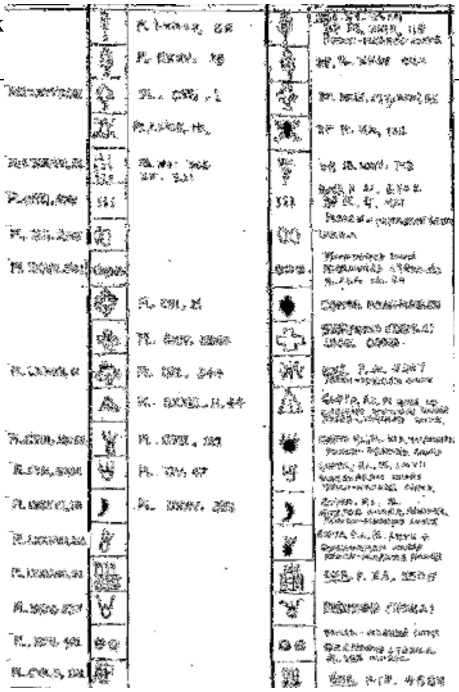
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

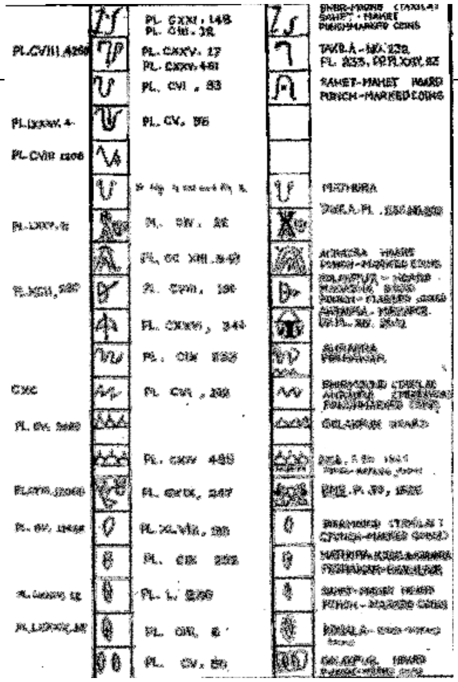


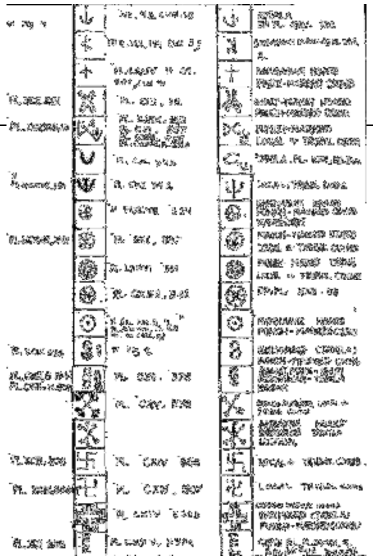
[Pl.8, Local Tribal coin symbols: Ujjayini, Tripuri, Ayodhya, Almore, Pa_n~ca_la, Arjuna_yana (1-3), Ra_janya (3,6,8), Uddehika, Audumbara, Kun.inda, Kuluta, Vr.s.n.i, Yaudheya, Ks.atrapa, S'a_tava_hana]

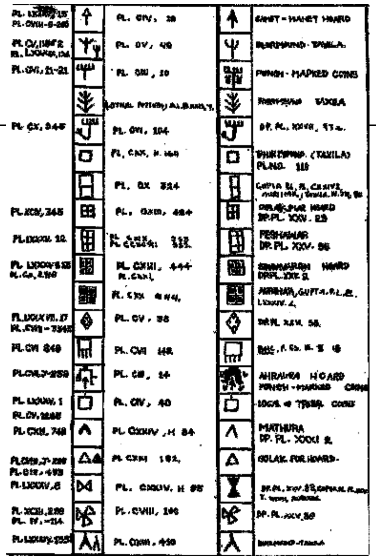
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

[After Pl. 10 to 13 in: Savita Sharma, 1990, *Early Indian Symbols: Numismatic evidence*, Delhi, Agam Kala Prak

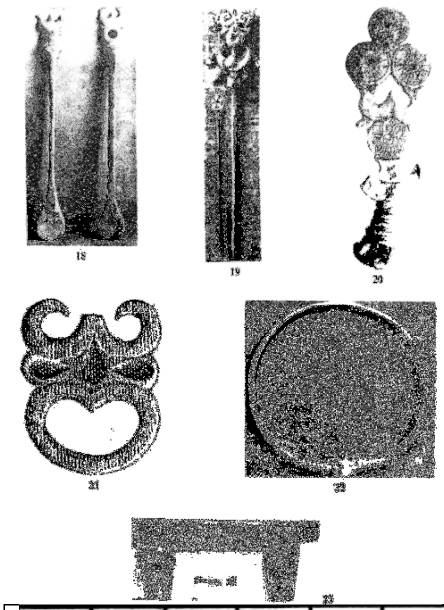






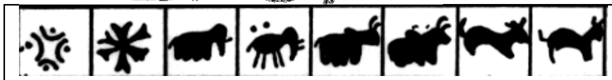


PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

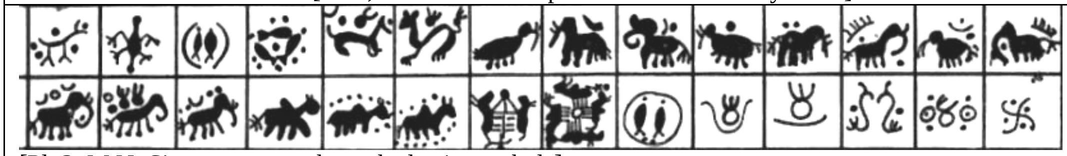


18. Spatulas, iron (of surgical purpose), Sirkap, Taxila, stratum II (pl. 185, b = no. 363); 19. hairpins, gold, Sirkap, Taxila, stratum II (no. 101, Marshall); 20,21 bronze buckle, Sirkap, Taxila, stratum II, no. 31 (Marshall); 22. Torque of solid gold, Sirkap, Taxila, stratum I (pl. 195, J = no. 147, Marshall); 23. Reddish sand stone stool, Sirkap, Taxila, stratum II (pl. 140, Marshall)[Pl. XXIII]

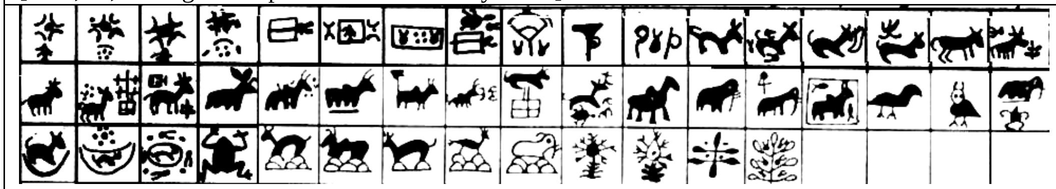
In the following illustrations, the punch-marked symbols on coins are sequenced from left to right by cultural periods at each find-site:



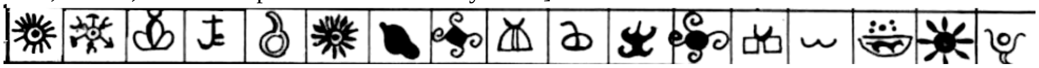
[Pl. 2, N: Sahet-Mahet punch-marked coins symbols]



[Pl. 3, M,N: Singavaran punch-marked coin symbols]

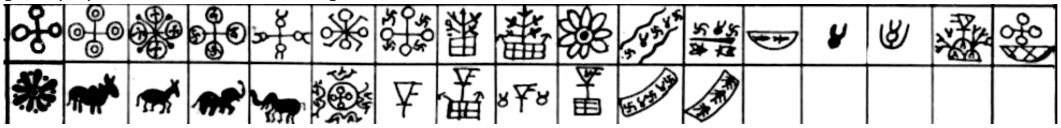


Pl. 5, A to C, Amaravati punch-marked coin symbols]



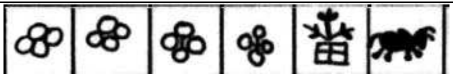
Pl. 5, D, Punch-marked copper coins, Madhipur]

[Pl. 5, E, Uninscribed cast coins]

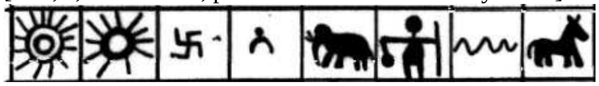


[Pl. 5, F, G, Eran punch-marked local coin symbols]

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



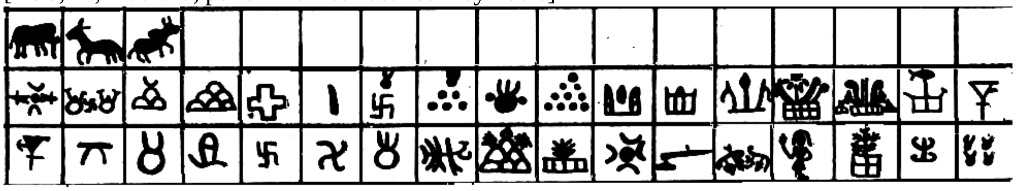
[Pl.5, J, Ahichhatra, punch-marked local coin symbols]



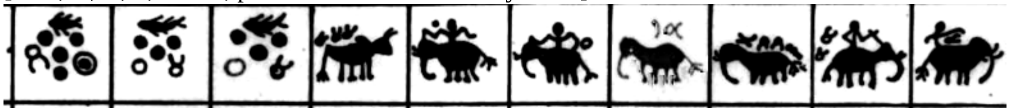
[Pl.5, K, Kada, punch-marked local coin symbols]

[Pl. 5, L, Kanauj, punch-marked local coin symbols]

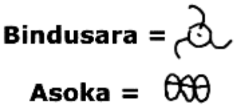
[Pl. 5, M, Mathura, punch-marked local coin symbols]



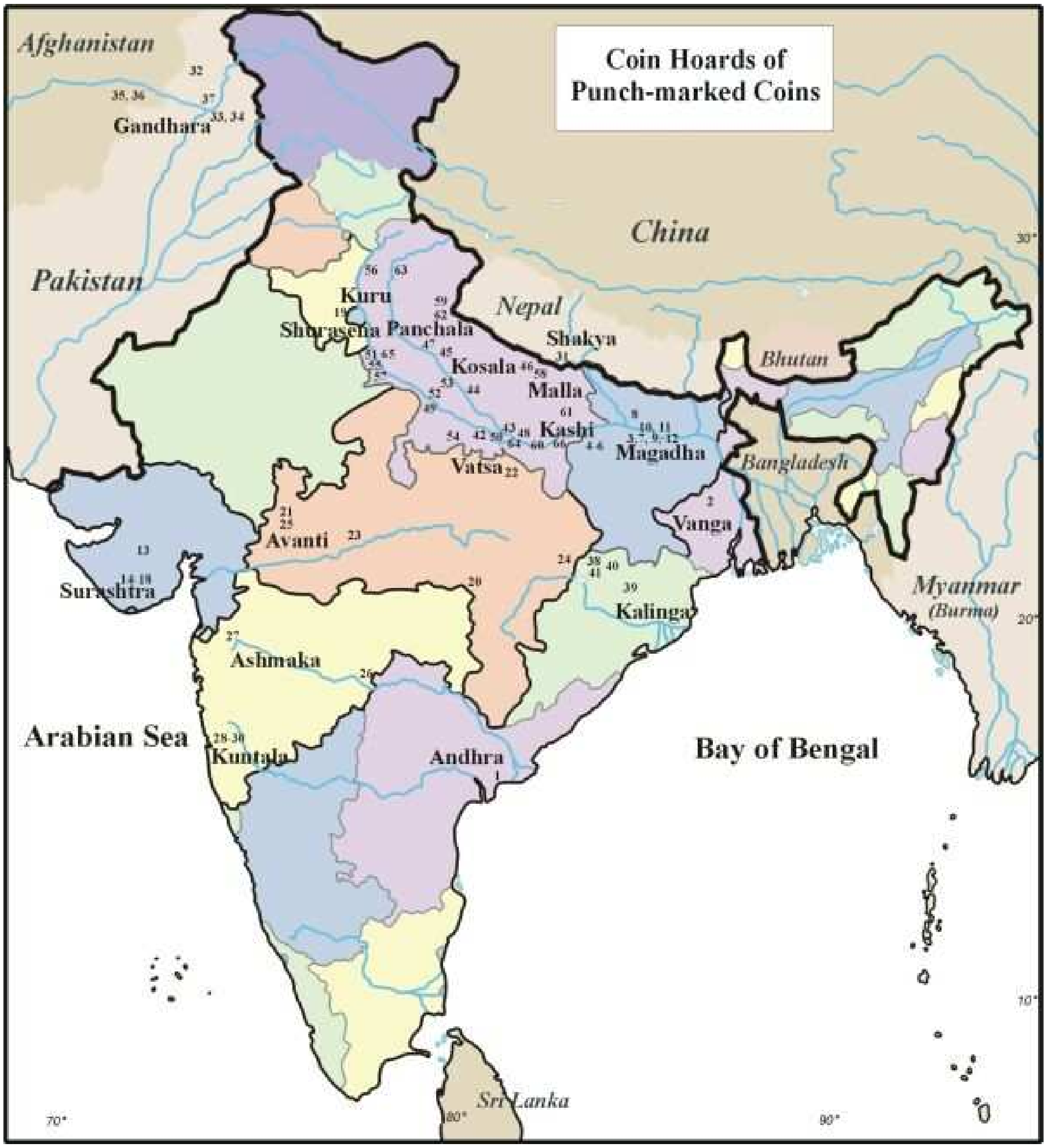
[Pl. 5, N, O, P, Taxila, punch-marked local coin symbols]



[Pl. 6, A, Shamiawala (Lucknow Museum) Uttara Pa_n~ca_la Ahicchatra (Type I) punch-marked coin symbols]



PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



Map showing hoard sites of punch-marked coins

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Method to decode sets or categories of inscribed objects

Linguistic area of Sarasvati Civilization

A major problem in establishing the continuity of the Bha_rati_ya civilization beyond ca. 1300 BCE is the as yet unresolved problem of the decoding of the inscriptions of the Sarasvati-Sindhu civilization.

The underlying hypothesis of the analysis presented herein is that the Bha_rati_ya languages constitute the core legacy from the linguistic area of this civilization.

A simple step is attempted and presented, based on the orthographic-semantic framework that the epigraphs are composed of hieroglyphs which can be read *rebus*.
The pictorials in inscriptions on media unearthed in archaeological excavations (and taken from the exquisite corpuses of Mahadevan and Parpola) are tagged to the morphemes of the languages of Bharat.

Using the rebus principle, homonyms with substantive meanings are identified: such as the tools of jeweller-smithy, turner, silver-trader.

End Notes contain a select list of lexemes of languages of Bha_rata related principally to economic activities. There is a traditional reference to the nidhi-s of Kubera; they may be relatable to the following semantics, all tools of trade of braziers: *mukunda* = quicksilver (IL 1973); *kunda* = turner; *s'ankha* = *turbinella pyrum*; *padmaka* = redwood tree, *prunus cerasoides*; *kharva* = baked pottery (**karuvu** 'embossed work')

Phonemic balance is sought to be established in a number of sets of concordance between 'image' words and 'tools-of-trade' words.

Each concordance set has two categories of lexemes:

words which are adaptable for hieroglyphic representation ('image' words);
words related to the artefacts of the bronze-age civilization ('tool or product' words).

Many inscribed objects have recurrent glyphs. The graphemes of the script are vividly hieroglyphic as seen in many signs.

The sign list in a perspective snapshot presents a number of variants and ligatures which reinforce the hieroglyphic nature of orthography and a unique use of ligatured glyphs.

Justification for the use of rebus method

Through a number of monographs, superb structural analyses of the inscriptions have been done by both Parpola and Mahadevan. The analyses point to the use of most of the signs as representing ‘nouns’.

The use of the rebus methodology is justified on the following evidence and analysis:

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

The pictographs to which 'sound-bites' need to be tagged, as keys to the process of decoding the inscriptions, cover a wide range and number of inscribed objects as shown by the following frequencies (out of 13,372 occurrences of signs and 100 pictorial motifs (the frequencies are only indicative numbers, hence, approximate and are subject to change as the orthography of many pictographs and signs get more precisely identified):

Hieroglyphs and frequencies of occurrence on epigraphs

One-horned bull with a pannier	1159 + 5 (with two horns)
Shor-horned bull	95 +2 (in opposition)
Zebu or Bra_hman.i bull	54
Buffalo	14
Elephant	55 + 1 (horned)
Tiger (including tiger looking back)	16 + 5 (horned)
Boar	39 + 1 (in opposition)
Goat-antelope	36 + 1 (flanking a tree)
Ox-antelope	26
Hare	10 +1 (object shaped like hare)
Ligatured animal	41
Alligator	49
Fish	14 (objects shaped like fish); fish also a sign
Frog	1
Serpent	10
Tree	34 + 1 (leaves); leaf also a sign **tebr.a, tebor**. = thrice (Santali) **ta(m)bra** = copper (Pkt.); **tibira** = copper merchant (Akkadian)
Dotted circle	67 **ghan:ghar ghon:ghor** ‘full of holes’ (Santali); rebus: **kan:gar** ‘portable furnace (K.)
Svastika	23 rebus: **satthiya_** ‘dagger, knife’ (Pkt.) **satva** 'zinc' (Ka.)
Endless-knot	4
Double-axe	14 (inscribed objects shaped like axe)
Standard device (lathe, portable furnace)	19
Rimmed narrow-necked jar	1395
Fish signs	1241
Leaf signs	100
Spoked wheel	203
Cart frame + wheels	26
Sprout (or, tree stylized)	800
Water-carrier	220
Scorpion	106
Claws (of crab)	130 + 90 (shaped like pincers)
Arrow (spear)	227
Rimless, wide-mouthed pot	350

Frequency range	No. of signs	Total sign occurrences	Percentage	Cumulative percentags
1000 or more	1	1395	10.43	10.43

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

999-500	1	649	4.85	15.28
499-100	31	6344	47.44	62.72
99-50	34	2381	17.81	80.53
49-10	86	1833	13.71	94.24
9-2	152	658	4.92	99.16
Only once	112	112	.84	100.00

Thus, only 67 signs account for a total of 80.53 percent of all occurrences of signs on inscribed objects.[After Mahadevan, 1977: 17].

Unit of analysis: inscribed object

We have to be very cautious in interpreting the individual signs and individual pictorials; because, given the small size of the corpus, virtually ANY lexemic or phonemic or even artistic (cultural) value may be assigned and ANY language may be read into the inscriptions, if inscriptions they are, ‘readable’ in a language and do not merely represent artistic extravaganzas.

Total objects presented in Parpola pictorial corpuses and Mahadevan concordance are a statistically small population, further fragmented due to the 400 to 500 signs (including variants and ligatures of basic signs) and over 100 (including variants and pictorial ligatures yielding the so-called 'fabulous' animals categories). Thus, statistical stratification techniques assuming a normal distribution of population cannot provide statistically verifiable results.

Hence, an inscribed object is the unit of analysis.

Considering that as many as 273 (111 + 42 + 120) inscriptions are communicated using two signs or less (with or without a pictorial motif or 'field symbol'), it may not be appropriate to assign syllabic or alphabetic values to each sign or each pictorial. Each pictorial or each sign may contain a 'word' or 'lexeme'.(Unless, of course, the entire messaging system is cryptographic using 'syllabic' or 'alphabetic' codes; this we think, is unlikely considering the nature of the cylinder seals in Mesopotamia mainly with pictorials used to convey movable property items.)

One clue emerges from the fact that there are inscribed object with only pictorials (i.e. without any sign constituting a ‘text’): the pictorials are as important as signs and must be 'deciphered' to understand the message conveyed by the inscription on an object.

Another clue may be surmised considering that there are inscribed objects with just a single sign: a sign by itself may constitute a message and hence may be a lexeme.

Nature of objects with epigraphs

Possessions and objects made could be described on epigraphs on many types of objects, such as: seals, tablets, copper plates, bangles and even on a monumental display-board (like an advertisement hoarding).

The frequencies in parenthesis are based on Mahadevan conordance (which excludes objects that do not contain a 'sign'); the actual numbers will be higher based on the more comprehensive Parpola photo corpus which includes inscriptions containing only pictorials.

Seals (1814)
Tablets (in bas-relief or inscribed) (511)*[including Seal Impressions]
Miniature tablets (of stone, terracotta or faience) (272)
Copper tablets (plates) (135)
Bronze implements/weapons (11)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Seal Impressions*
Pottery graffitii (119)
Ivory or bone rods (29)
Inscribed on stone, bracelets (or, bangles), Ivory plaque, Ivory dice, Carnelian tablet, Terracotta ball, Brick (15)
Display-board (Dholavira or Kotda with 10 signs, possibly atop a gateway) (1)

Almost all the miniature tablets are from Harappa; almost all copper tablets are from Mohenjodaro. An inference is that the miniature tablets served the same function as the copper tablets which evidence repetitive messages or sign sequences.

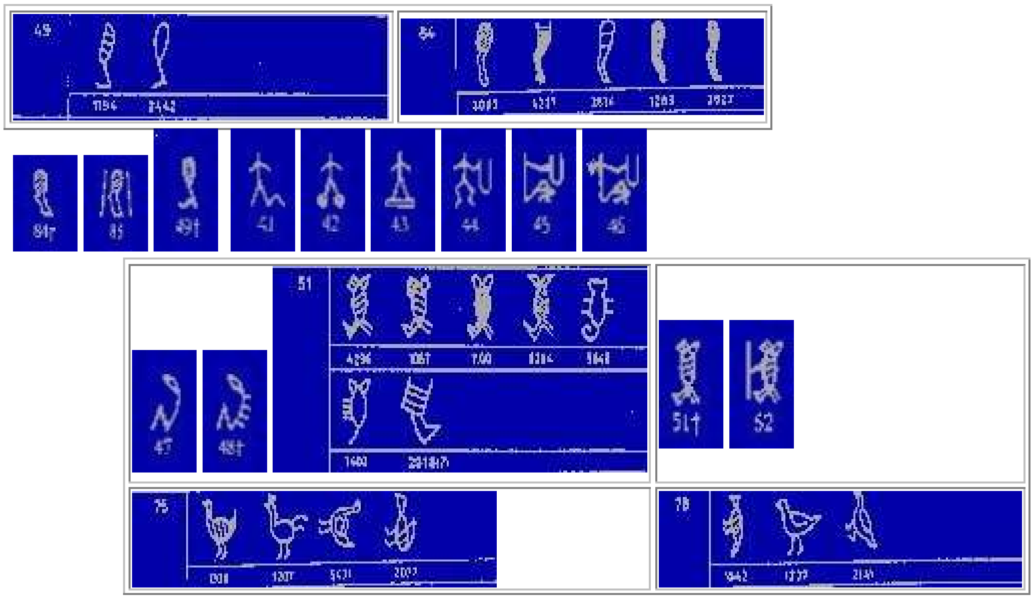
Many epigraphs could have been recorded only by metal-smith-fire-workers

This classification provides a clue as to the function served by many inscriptions: inscriptions on bronze implements/weapons (11) and copper tablets (135) could perhaps have been done only by a metal-smith-fire-worker. There is a reasonable inference here: many messages may relate to the 'economic activity' of metal-smiths. This inference is consistent with the emergence of the Bronze Age in neighbouring civilizations which have also attested to contacts with the Sarasvati-Sindhu civilization sites (witness, for e.g. the finds of cylinder seals in Bha_rati_ya sites and the finds of 'Indus' seals and artefacts in Mesopotamian sites.)

Glyptic art in epigraphs

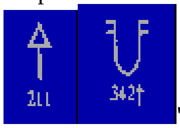
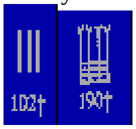
The pictorials in inscriptions are composed of both signs and field symbols (glyphs). Many signs of the script are clearly derivatives from pictorial motifs (glyphs). For example, there are over 50 seals depicted in the Parpola pictorial corpus containing the motif, svastika as a field symbol. Similarly there are inscriptions containing the motif of a dotted circle which has not been recognized as a sign of the script by the corpus compilers.

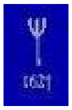
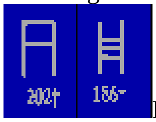
Many such pictographic signs (or glyphs/graphemes) may be identified.



PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Orthography and analysis of some sequences of graphemes in the inscriptions

Parpola notes (1994, pp. 84-85), echoing similar observations by Mahadevan: "…a few signs are indeed found mostly at the end of inscriptions, notably sign 342 (‘jar’ grapheme)and sign 211 (‘arrow’ grapheme) and they are major aids in the segmentation of texts. The sign 342 (‘jar’ grapheme) is by far the most common sign of the Indus script, representing about 10 percent of all sign occurrences. About one-third of all inscriptions end with this sign…the sign is never found at the beginning of inscriptions…The sequence sign 102 (‘three short strokes’) followed by sign 192 mainly occurs at the end of inscriptions, and is never followed by the usual ‘end’ sign 342 (‘jar’ grapheme)…" 

The sign 190 appears to be a four-fold ligaturing of the underlying basic sign:  Parpola notes (1994, pp.103-104): "A comparative study of the allographs provides one important means of identifying the iconic meaning of even fairly abstract shapes…the (allograph) continuum)…Taken together, these signs can be understood as pictures of a single object, namely, ‘steps, staircase or ladder’; taken individually, such a conclusion would hardly be possible."

Frequent sign pairs in relation to inscribed objects and field symbols

The second column shows the pictographs (signs) which occur with relatively high frequency. The first column is the sign which pairs with the sign shown in the second column.

Substantial decoding of the inscriptions will require a decoding of the signs shown in the second and first columns.

The most frequently occurring sign is Sign 342 with over 1395 occurrences

Daimabad Sign342 (1395)

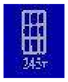
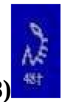
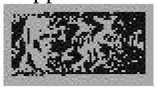
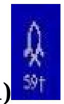
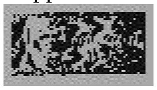
Recurrent pairs of signs and paired lexemes

These high frequency pairs of glyphs can be explained by many indic lexemes using the rebus method to identify each glyph and corresponding substantive message sought to be conveyed on epigraphs.

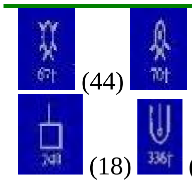
kanka = rim of pot (Santali) Rebus: **kan:ka** = a metal (Pali); **kan-** = copper (Ta.) **kanaka** = gold; kanaka_dhyaks.a = superintendent of gold, treasurer (Skt.) **kan-n-a_r,** blacksmiths, coppersmiths (Ta.)

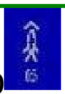
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

kan.d.a = a pot of certain shape and size (Santali) Rebus: **kan.d.** = altar, furnace (Santali) **khan.d.a** = instrument, implement, weapon; khan.d.a puruskedae, he stretched his arm grasping the sword as high as he could; **khan.d.a bhan.d.a** = implements of all kinds, arms of all sorts (Santali.lex.) **khan.d.a puruskedae**, he stretched his arm grasping the sword as high as he could (Santali.lex.)

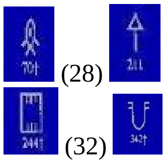
Pairing sign (Relatively high frequency, to the left of the sign read from right to left)	**Sign (Frequency)/ Pictograph**	Association of sign with: (a) Inscribed object (frequency)/ (b) Field symbol (frequency)
(14)	**Sign 1 (134)**	
(93)	**Sign 8 (105)**	
	Sign 12 (80)	
(26)	**Sign 15 (126)**	
	Sign 17 (91)	
	Sign 18 (27)	Copper tablets (15)
 (25)	**Sign 25 (53)**	Copper tablets (12)
(10)	**Sign 28 (50)**	
(114)	**Sign 48 (168)** 	Copper tablets (13)  Field Symbol 36 (10)
(58)	**Sign 51 (105)**	
(16) (40)	**Sign 53 (130)**	
(55) (44)	**Sign 59 (381)** 	Copper tablets (14)  Field Symbol 36 (17)

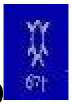
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com


(44) (24) (18) (20)

Sign 65 (216) 

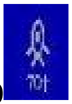
Copper tablets (16)


(28) (26) (32) (21)

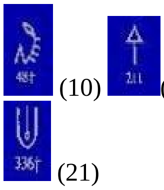
Sign 67 (279) 

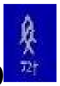
Copper tablets (8)

(10)

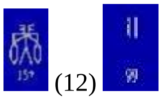
Sign 70 (73) 

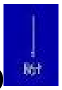
Copper tablets (5)

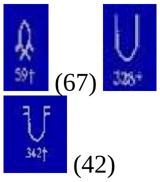

(10) (24) (21)

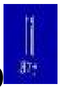
Sign 72 (188) 

Copper tablets (20)


(12) (10)

Sign 86 (149) 


(67) (78) (42)

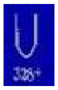
Sign 87 (365) 

Copper tablets (21)

(44) (124)

Sign 89 (314)

Copper tablets (29)

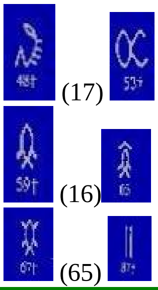

(58)

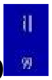
Sign 95 (64)
(12)

Sign 97 (91)

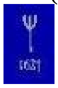
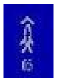
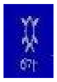
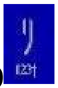
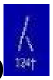
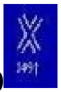
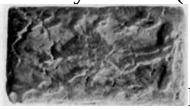
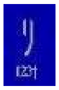
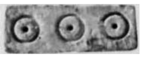
Copper tablets (16)

Sign 98 (88)

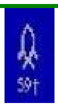
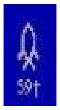
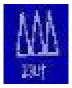
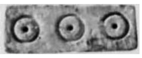
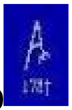
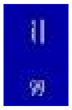
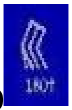
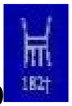
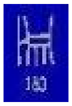
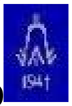
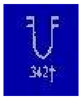
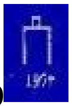
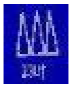
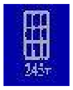

(17) (16) (16) (40) (65) (43)

Sign 99 (649) 

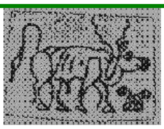
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

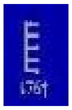
(24) (17) (29)		
(19)		
(18) (20) (20)	**Sign 102 (151)**	Copper tablets (9)
 (21) (24)	**Sign 104 (70)**	
(27) (11)	**Sign 112 (70)**	Copper tablets (10)
(14)	**Sign 121 (70)**	
 (11)  (11)	**Sign 123 (193)** 	
(30)		
(30) (16)	**Sign 124 (78)** 	Copper tablets (17)
(13)		
(9)	**Sign 127 (50)**	
(39)	**Sign 130 (63)**	h172B Field Symbol 36 (10)
(44)	**Sign 149 (92)** 	 h172B Field Symbol 36 (10)
 (44)	**Sign 150 (63)**	
(10)	**Sign 155 (49)**	
(40)	**Sign 162 (212)**	 h352C Dotted circles. Field symbol 83 (10)
(48)	**Sign 169 (240)**	Copper tablets (60) Hare. Field symbol 16 (19)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

(40)  (76)	**Sign 171 (132)**	
 (7)	**Sign 173 (38)**	
(11)  (16)	**Sign 175 (54)**	
(9) (10)	**Sign 176 (355)**	Ivory or bone rods (12) Field symbol 44 (12)  h352C Dottec circles. Field symbol 83 (23) h172B Field Symbol 36 (17)
(29)	**Sign 178 (35)** 	Field symbol 44 (6)
 (18)	**Sign 180 (44)** 	
(30)	**Sign 182 (43)** 	h172B Field Symbol 36 (11) Copper tablets (10) Hare. Field symbol 16 (9)
	Sign 183 (11) 	
(27)	**Sign 194 (58)** 	
 (14)	**Sign 197 (60)** 	Copper tablets (22)
 (12)  (31)	**Sign 204 (76)**	

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

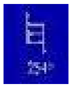

Field Symbol 14 (19)

 (11)

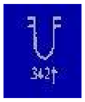
Sign 211 (227)

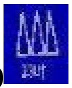
m1148 Field Symbol 7 (9)

Ivory or bone rod (3)

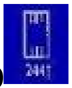
(23)  (29)

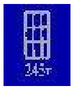
Sign 216 (90)
'Tree' Field symbol 44 (5)

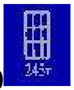
(14)  (13)

Sign 230 (54) 

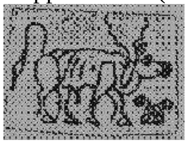
(34)

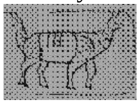
Sign 244 (89) 

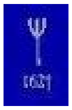
 (70) (21)

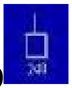
Sign 245 (207) 

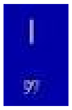
Copper tablets (48)

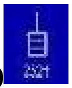

Field Symbol 14 (20)


Field Symbol 29 (10)

 (54) (47)

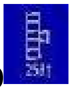
Sign 249 (170) 

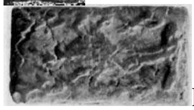
 (13)

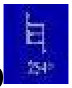
Sign 252 (51) 

Copper tablet (11); bronze implements (2)

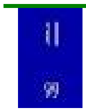
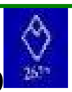
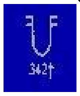
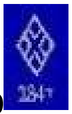
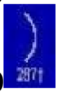
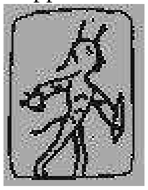
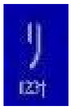
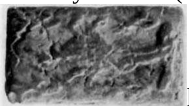
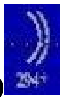
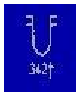
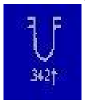
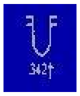
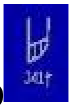
'Tree' Field symbol 44 (7)

Sign 258 (20) 

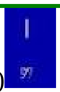
 h172B Field Symbol 36 (8)

Sign 254 (73) 

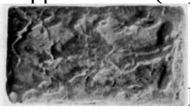
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

 (291) (32)	**Sign 267 (376)** 	
 (9)	**Sign 284 (41)** 	
(37)	**Sign 287 (88)** 	Copper tablets (15)  Field Symbol 52 (6)
 (54)	**Sign 293 (136)**	 h172B Field Symbol 36 (12) Hare. Field symbol 16 (10)
(28)	**Sign 294 (53)** 	
 (32)	**Sign 296 (35)**	
 (8)	**Sign 307 (69)**	
(18)	**Sign 326 (35)**	Copper tablets (6)
(16)	**Sign 327 (42)**	
(10)	**Sign 328 (323)**	
(126) (12)	**Sign 336 (236)**	Copper tablets (27) m1148 Field Symbol 7 (10)
(13)		
 (16)	**Sign 341 (59)** 	

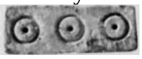
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

(87)  (17) **Sign 342 (1395)**

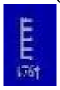
Copper tablets (82)

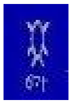
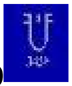
 h172B

Field Symbol 36 (38)

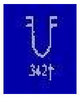
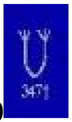
 h352C

Field symbol 83 (33)

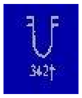
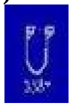
 (184)

 (12) **Sign 343 (177)** 

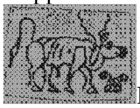
Sign 345 (51)

 (110) **Sign 347 (118)** 

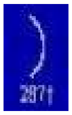
Ivory or bone rods (5)

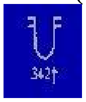
 (31) **Sign 358 (32)** 

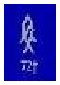
Copper tablets (20)

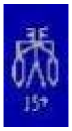
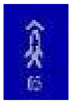
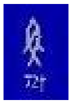
 Field Symbol 14 (19)

Copper tablets (14)

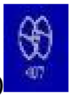
 (17) **Sign 373 (61)**

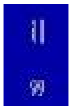
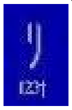
 (10) **Sign 375 (57)**

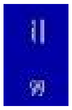
 (12) (16) **Sign 387 (102)**

 (28)  (15)  (15) **Sign 389 (134)**

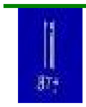
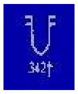
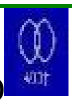
Copper tablets (25)

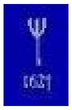
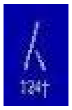
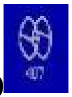
(15)  (11)

 (83)  (24) **Sign 391 (195)**

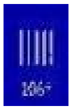
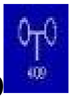
 (16) **Sign 402 (99)**

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

 (34)  (21) **Sign 403 (93)** 

 (10)  (17) **Sign 407 (48)**  Copper tablets (34)

(26)

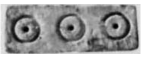
 (17) **Sign 409 (26)** 

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Notes:
Association with sites:

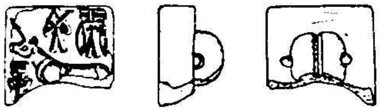
h172B Field Symbol 36 (Alligator? Lizard!): Out of 49, 36 occur at Harappa; Field Symbol 37 (Inscribed object in the shape of fish), 14 out of 14 occur at Harappa

'Tree' Field Symbol 44 (Tree) 28 out of 34 occur at Harappa

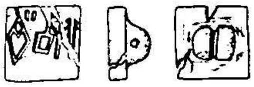
 h352C Field Symbol 83 (Dotted circles) 57 out of 67 occur at Harappa

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

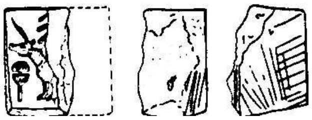
Inscribed objects found during exactions in 1993, 1994, 1995 at Harappa



har601 Steatite seal



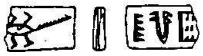
har602 Steatite seal



har603 Steatite seal

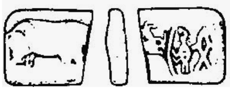
har604 Steatite tablet, incised

har605 Steatite tablet, incised



har606 Steatite tablet, incised

har607 Steatite tablet, incised

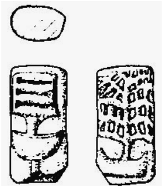


har608 terracotta tablet, bas-relief

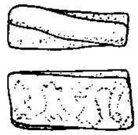
har609 terracotta tablet, bas-relief

har610 faience tablet, bas-relief

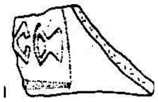
har611 faience tablet, bas-relief



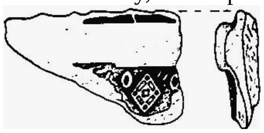
har612 faience tablet, bas-relief



har613 faience tablet, bas-relief



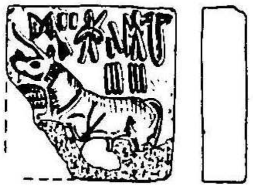
har614 Pottery, seal impression



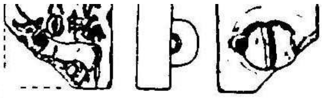
har615 Terracotta tag, impressed.

1 7.01
Cast tablet, copper alloy

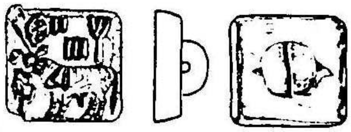
2 7.02
Cast tablet, copper alloy



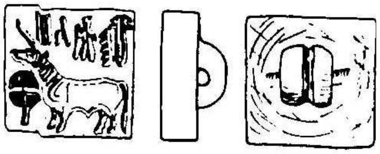
3
7.03 Seal



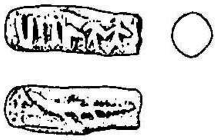
4
7.04 Seal



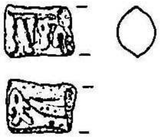
5
7.05 Seal



6
7.06 Seal

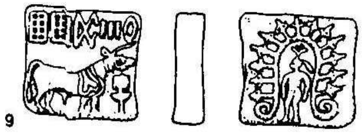


7
7.07 Moulded tablet 2 sides

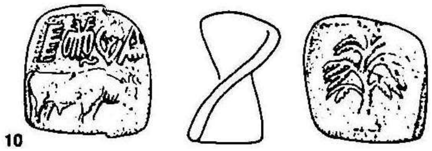


8
7.08 Moulded tablet 2 sides

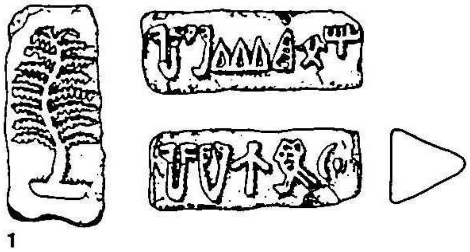
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



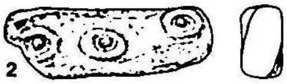
7.09 Moulded tablet 2 sides



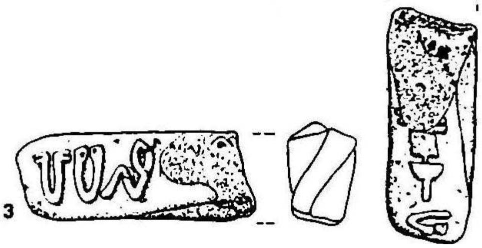
7.10 Moulded tablet 2 sides



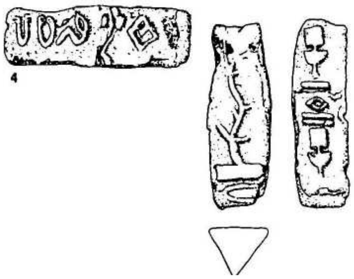
8.01 Moulded tablet 3 sides



8.02 Moulded tablet 2 sides



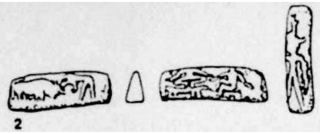
8.03 Moulded tablet 2 sides



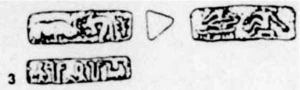
8.04 Moulded tablet 3 sides

8.05Moulded tablet 2 sides

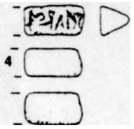
9.01 Moulded tablet 2 sides



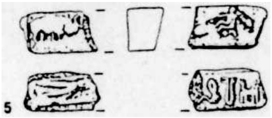
9.02 Moulded tablet 3 sides



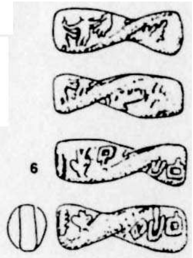
9.03 Moulded tablet 3 sides



9.04 Moulded tablet 3 sides



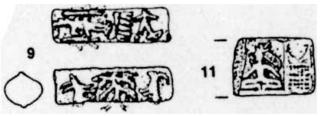
9.05 Moulded tablet 4 sides



9.06 Moulded tablet 2 sides

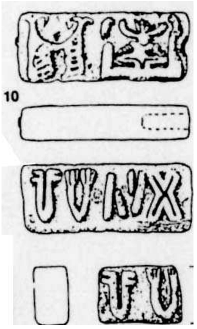
9.07 Moulded tablet 2 sides

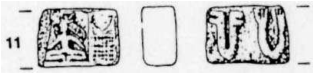
9.08 Moulded tablet 2 sides



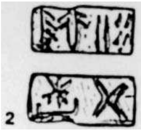
9.09 Moulded tablet 2 sides

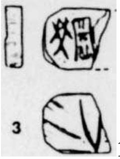
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

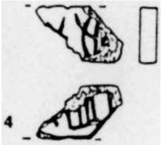

9.10 Moulded tablet 2 sides

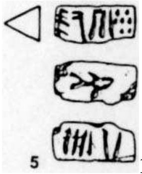

9.11 Moulded tablet 2 sides

10.01 Incised tablet 2 sides

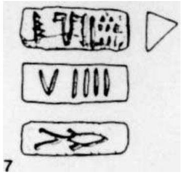

10.01 Incised tablet 2 sides

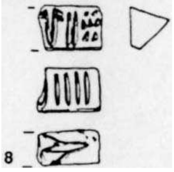

10.03 Incised tablet 2 sides

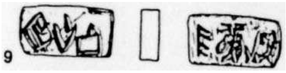

10.04 Incised tablet 2 sides

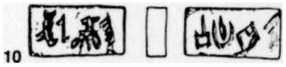

10.05 Incised tablet 3 sides

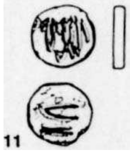
10.06 Incised tablet 3 sides

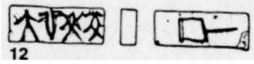

10.07 Incised tablet 3 sides

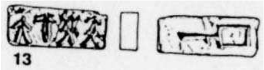

10.08 Incised tablet 3 sides

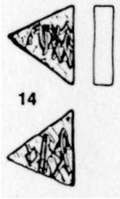

10.09 Incised tablet 2 sides

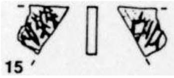

10.10 Incised tablet 2 sides

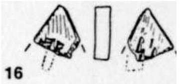

10.11 Incised tablet 2 sides


10.12 Incised tablet 2 sides

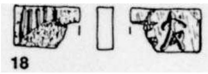

1013 Incised tablet 2 sides


10.14 Incised tablet 2 sides


10.15 Incised tablet 2 sides

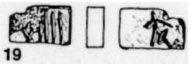

10.16 Incised tablet 2 sides

10.17 Incised tablet 2 sides

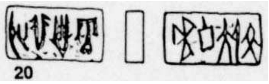


PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

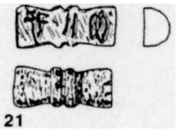
10.18 Incised tablet 2 sides



10.19 Incised tablet 2 sides



10.20 Incised tablet 2 sides



10.21 Incised tablet 1 side

11.1 to 11.3 terracotta moulded tablets 2 sides

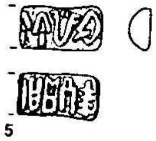
11.01

11.02

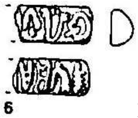
11.03

11.4 to 11.12 faience moulded tablets 2 sides

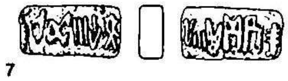
11.04



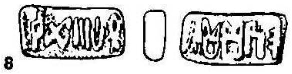
11.05



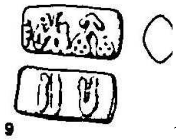
11.06



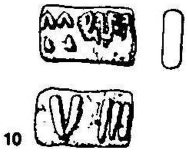
11.07



11.08

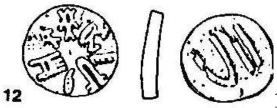


11.09



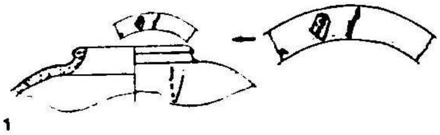
11.10

11.11

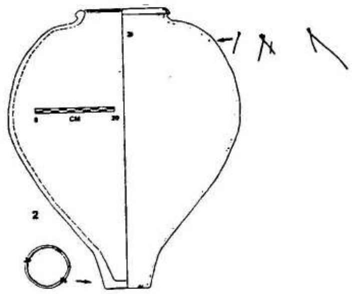


11.12

Inscribed ceramic vessels

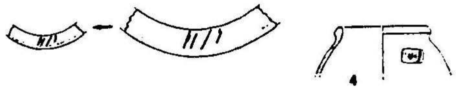


12.1 black-slipped jar



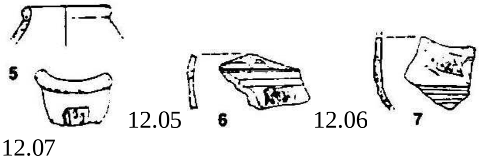
12.2 black-slipped jar

12.3 vessel fragment (stone)



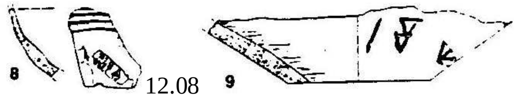
12.4 pointed base goblet with seal impression

12.5 to 12.8 pointed base goblet sherds with seal impressions



12.05 12.06

12.07

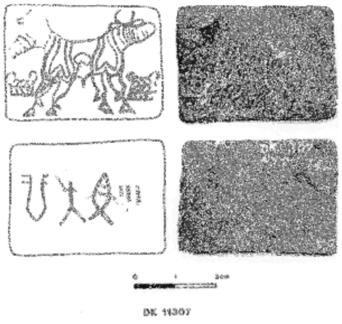


12.08

12.09 Chuck mould fragment with incised signs

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Mountain topped by a leaf gets stylized as an important motif. Pro-elamite glyptics. Leaf motif. 1-c, After Legrain,L., 1921, Empreintes de cachets elamites, *Mem. Mission Arch. De Perse* 16, Paris: 62-654; d. After Amiet, P., 1961, *La glyptique mesopotamienne archaique*, Paris: 497; Mundigak IV.3; 3. After Casal, J.M., 1961, Fouilles de Mundigak I-II. *Mem. Delegation Arch. Franaise en Afthanistan* 17, Paris: fig. 102: 485; f. Early Harappan. Kalibangan. After Sankalia, 1974: 346, fig. 88d, A. H-L; cf. Fig. 23.45 Asko Parpola, 1996, fig. 23.45. Two goats eating from a tree on a mountain top in proto-Elamite seals from Susa [After Amiet, P., 1972, Glyptique susienne I-II, *Mem. Delegation Arch. En Iran* 43, Paris: 978 and Legrain, L., 1921, Emprientes de cachets elamites, *Mem. Mission Arch. De Perse* 16, Paris: 316].



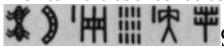
Mohenjo-daro. Copper tablet DK 11307 (SC 63.10/262).

Mohenjodaro; limestone; Mackay, 1938, p. 344, Pl. LXXXIX:376.

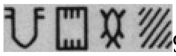
Mohenjodaro; Pale yellow enstatite; Mackay 1938, pp. 344-5; Pl. XCVI:488; Collon, 1987, Fig. 607.

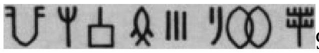
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Texts related to West Asian inscriptions (either not illustrated or not linked):

9801Susa

9811Djoka (Umma)

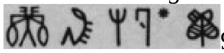
9821 Kish

9822 Kish

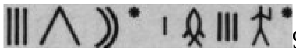
9834 Ur

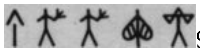
9842 Ur

[Pierre de talc. Louvre, AO 9036. P. Amiet, Bas-relliefs imaginaries de l'Orient ancien, Paris, 1973, p. 94, no. 274…ils proviendrait de Tello, l'ancienne Girsu, une des cites de l'Etat sumerien de Lagash. Musee National De Arts Asiatiques Guimet, 1988-1989, *Les cites oubliees de l'Indus Archeologie du Pakistan*.]

9851 Telloh

9852 Telloh

9903 Prob. West Asian find

9904 Prob. West Asian find

Susa, Iran; steatite cylinder seal . A bison with head lowered, feeding from a basin. A second bison figure is seen. Inscription on top. Louvre Sb 2425, Delaporte, 1920, s.299 and cf. T.24 from Tello, Iraq; Collon, 1987, Fig. 608.Musee du Louvre and Pierre and Maurice Chuzeville; Legend: Indus script; bone.

Many scholars have noted the contacts between the Mesopotamian and Sarasvati Sindhu (Indus) Civilizations, in terms of cultural history, chronology, artefacts (beads, jewellery), pottery and seals found from archaeological sites in the two areas.

Cylinder seal impression. British Museum (Reg. No. OA 1960.7-18.1). Found in Seistan. Called the MacMahon cylinder seal. The end of the cylinder shows a combination of triangles (like a range of mountains) reminiscent of a Mohenjo-daro seal (M-443B). The inscription has six signs: a human figures ligatured to three rows of four vertical lines (total count of 12).. Next is a human figure holding in his left hand a rectangular device filled with single hatching (see Marshall 1931, II: 446, no. 196b).

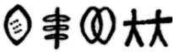
"...the four examples of round seals found in Mohenjodaro show well-supported sequences, whereas the three from Mesopotamia show sequences of signs not paralleled elsewhere in the Indus Script. But the ordinary square seals found in Mesopotamia show the normal Mohenjodaro sequences. In other words, the square seals are in the Indian language, and were probably imported in the course of trade; while the circular seals, although in the Indus script, are in a different language, and were probably manufactured in Mesopotamia for a Sumerian- or Semitic-speaking person of Indian descent..." [G.R. Hunter,1932. Mohenjodaro--Indus Epigraphy, *JRAS*: 466-503]

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

The acculturation of Meluhhans (probably, Indus people) residing in Mesopotamia in the late third and early second millennium BC, is noted by their adoption of Sumerian names (Parpola, Parpola and Brunswig 1977: 155-159). "The adaptation of Harappan motifs and script to the Dilmun seal form may be a further indication of the acculturative phenomenon, one indicated in Mesopotamia by the adaptation of Harappan traits to the cylinder seal." (Brunswig et al, 1983, p. 110).

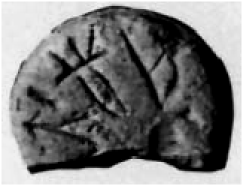
[Robert H. Brunswig, Jr. et al, New Indus Type and Related Seals from the Near East, 101-115 in: Daniel T. Potts (ed.), *Dilmun: New Studies in the Archaeology and Early History of Bahrain*, Berlin, Dietrich Reimer Verlag, 1983.]

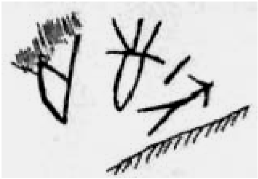
Louvre Museum; Luristan; unglazed, gray steatite; short-honed bull and 4 pictograms



a six-sign

Iraq museum; glazed steatite; perhaps from an Iraqi site; the one-horned bull, the standard are below



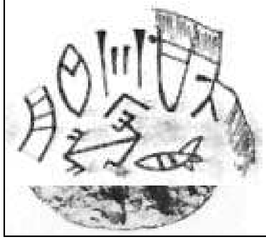


inscription.

4 Foroughi collection; Luristan; medium gray steatite; bull, crescent, star and net square; of the Dilmun seal type.

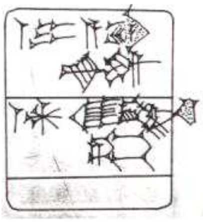
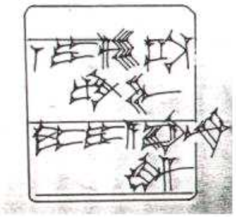
TextFailaka; unglazed steatite; an arc of four pictograms above the hindquarter of a bull.

Textseal, impression, inscription; Failaka; brownish-grey unglazed steatite; Indus pictograms above a short-horned bull.



PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

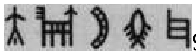
seal, impression; Qala'at al-Bahrain; green steatite; short-horned bull and five pictograms.

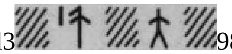
 

Found in association with an Isin-Larsa type tablet bearing three Amorite names.

Qala'at al-Bahrain; ca. 2050-1900 BC; tablet, found in the same level where 8 Dilmun seals and six Harappan type weights were found. Three Amorite names are: Obverse. Janbi-naim; Ila-milkum; Reverse. Jis.i-tambu (son of Janbi-naim). The script is dated to c. 2050-1900 BCE.

Qala'at al-Bahrain; light-grey steatite; hindquarters of a bull and two pictograms.

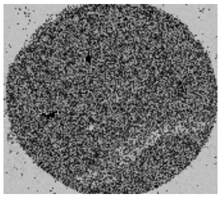
urseal2  9832 Ur Seal; BM 122187; dia. 2.55; ht. 1.55 cm. Gadd PBA 18 (1932), pp. 6-7, pl. 1, no. 2

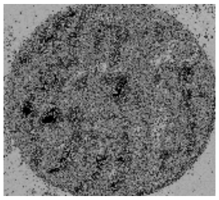
urseal3  9833 Ur Seal; BM 122946; Dia. 2.6; ht. 1.2cm.; Gadd PBA 18 (1932), p. 7, pl. I, no.3; Legrain, Ur Excavations, (1951), no. 629.

X

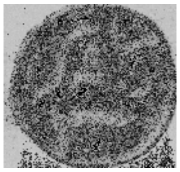
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

urseal8Seal; BM 118704; U. 6020; Gadd PBA 18 (1932), pp. 9-10, pl. II, no.8; two figures carry between them a vase, and one presents a goat-like animal (not an antelope) which he holds by the neck. Human figures wear early Sumerian garments of fleece.

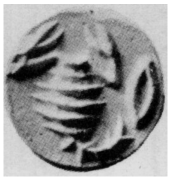




urseal9Seal; BM 122945; U. 16181; dia. 2.25, ht. 1.05 cm; Gadd PBA 18 (1932), p. 10, pl. II, no. o; each of four quadrants terminates at the edge of the seal in a vase; each quadrant is occupied by a naked figure, sitting so that, following round the circle, the head of one is placed nearest to the feet of the preceding; two figures clasp their hands upon their breasts; the other two spread out the arms, beckoning with one hand.



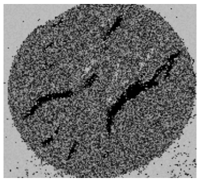
urseal10 Seal; BM 120576; U. 9265; Gadd, PBA 18 (1932), p. 10, pl. II, no. 10; bull with long horns below an uncertain object, possibly a quadruped and rider, at right angles to the ox (counter clockwise); "...there is, below, a bull with long horns roughly depicted, but above is a rather uncertain addition, which is perhaps an attempt to show one (possibly two) more, in a couching position, as viewed by turning the seal round until the face of the standing bull is downwards. If this is intended, the head of the second bull is turned back, and it is not, perhaps, quite impossible that the remaining part of the design is meant for a bird, such as is fairly often seen perched upon the back of a bull in Sumerian art, a device which has not yet been certainly explained." (C.J. Gadd, Seals of Ancient Indian Style Found at Ur', in: G.L. Possehl, ed., 1979, *Ancient Cities of the Indus*, Delhi, Vikas Publishing House, p. 118).



urseal11Seal; UPenn; a scorpion and an elipse [an eye (?)]; U. 16397; Gadd, PBA 18 (1932), pp. 10-11, pl. II, no. 11 [Note: Is the 'eye' an oval representation of a bun ingot made from **bica_,** sand ore?]

Rectangular stamp seal of dark steatite; U. 11181; B.IM. 7854; ht. 1.4, width 1.1 cm.; Woolley, Ur Excavations, IV (1956), p. 50, n.3. Scorpion.

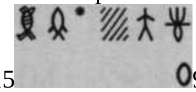
Seal impression, Ur (Upenn; U.16747); dia. 2.6, ht. 0.9 cm.; Gadd, PBA 18 (1932), pp. 11-12, pl. II, no. 12; Porada 1971: pl.9, fig.5; Parpola, 1994, p. 183; water carrier with a skin (or pot?) hung on each end of the yoke across his shoulders and another one below the crook of his left arm; the vessel on the right end of his yoke is over a receptacle for the water; a star on either side of the head (denoting supernatural?). The whole object is enclosed by 'parenthesis' marks. The parenthesis is perhaps a way of splitting of the ellipse (Hunter, G.R., JRAS, 1932, 476). An unmistakable example of an 'hieroglyphic' seal.

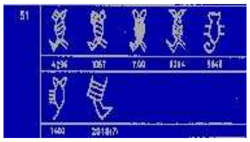


urseal13Seal; BM 122841; dia. 2.35; ht. 1 cm.; Gadd PBA 18 (1932), p. 12, pl. II, no. 13; circle with centre-spot in each of four spaces formed by four forked branches springing from the angles of a small square. Alt. four stylised bulls' heads (bucrania) in the quadrants of an elaborate quartering device which has a cross-hatched rectangle in the centre.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

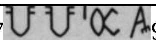
urseal14Seal; UPenn; cf. Philadelphia Museum Journal, 1929; ithyphallic bull-men; the so-called 'Enkidu' figure common upon Babylonian cylinders of the early period; all have horned head-dresses; moon-symbols upon poles seem to represent the door-posts that the pair of 'twin' genii are commonly seen supporting on either side of a god; material and shape make it the 'Indus' type while the device is Babylonian.

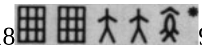
urseal159845 Ur [The first sign looks like an animal with a long tail – as seen from the back and may have been the model for the orthography of Sign 51 as noted in Mahadevan corpus].



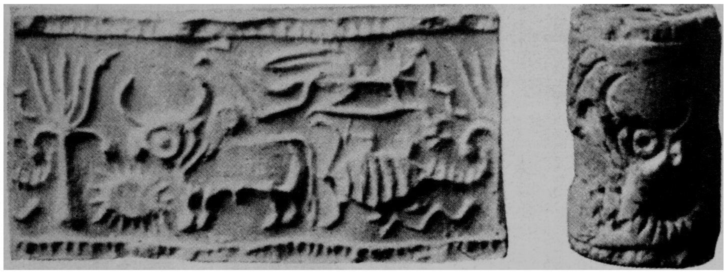
Variants of Sign 51. Seal impression; UPenn; steatite; bull below a scorpion; dia. 2.4cm.; Gadd, PBA 18 (1932), p. 13, Pl. III, no. 15; Legrain, MJ (1929), p. 306, pl. XLI, no. 119; found at Ur in the cemetery area, in a ruined grave .9 metres from the surface, together with a pair of gold ear-rings of the double-crescent type and long beads of steatite and carnelian, two of gilt copper, and others of lapis-lazuli, carnelian, and banded sard. The first sign to the left has the form of a flower or perhaps an animal's skin with curly tail; there is a round spot upon the bull's back.

urseal16 9846 UrSeal impression; BM 123208; found in the filling of a tomb-shaft (Second Dynasty of Ur). Dia. 2.3; ht. 1.5 cm.; Gadd, PBA 18 (1932), pp. 13-14, pl. III, no. 16; Buchanan, JAOS 74 (1954), p. 149.

urseal179901 Prob. West Asian find Seal impression, Mesopotamia (?) (BM 120228); cf. Gadd 1932: no.17; cf. Parpola, 1994, p. 132. Note the doubling of the common sign, 'jar'.

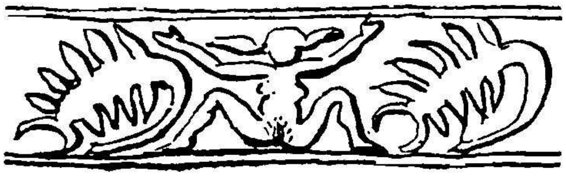
urseal189902 Prob. West Asian find Pictorial motif: Pict-45 Bull mating a cow. Seal and impression (BM 123059), from an antique dealer, Baghdad; script and motif of a bull mating with a cow; the tuft at the end of the tail of the cow is summarily shaped like an arrow-head; inscription is of five characters, most prominent among them the two 'men' standing side by side. To the right of these is a damaged 'fish' sign.cf. Gadd 1932: no.18; Parpola, 1994, p.219.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



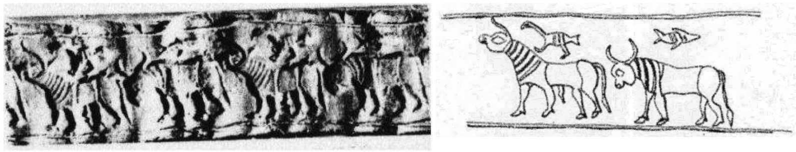
urseal6 Cylinder seal; BM 122947; U. 16220 (cut down into Ur III mausolea from Larsa level; U. 16220), enstatite; Legrain, 1951, No. 632; Collon, 1987, Fig. 611.Humped bull stands before a plant, feeding from a round manger or a bundle of fodder (or, probably, a cactus); behind the bull is a scorpion and two snakes; above the whole a human figure, placed horizontally, with fantastically long arms and legs, and rays about his head.

A symbolism of a woman spreading her legs apart, which recurs on an SSVC inscribed object. Cylinder-seal impression from Ur showing a squatting female. L. Legrain, 1936, *Ur excavations, Vol. 3, Archaic Seal Impressions*. [cf. Nausharo seal with two scorpions flanking a similar glyph with legs apart – also looks like a frog].



Mohenjo-daro. Sealing. Surrounded by fishes, lizard and snakes, a horned person sits in 'yoga' on a throne with hoofed legs. One side of a triangular terracotta amulet (Md 013); surface find at Mohenjo-daro in 1936. Dept. of Eastern Art, Ashmolean Museum, Oxford.

A zebu bull tied to a post; a bird above. Large painted storage jar discovered in burned rooms at Nausharo, ca. 2600 to 2500 BCE. Cf. Fig. 2.18, J.M. Kenoyer, 1998, Cat. No. 8.



A fish over a short-horned bull and a bird over a one-horned bull; cylinder seal impression, (Akkadian to early Old Babylonian). Gypsum. 2.6 cm. Long 1.6 cm. Dia. [Drawing by Larnia Al-Gailani Werr. Cf. Dominique Collon 1987, *First impressions: cylinder seals in the ancient Near East*, London: 143, no. 609] Tell Suleimeh (level IV), Iraq; IM 87798; (al-Gailani Werr, 1983, p. 49 No. 7)**.**

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Cylinder seal impression; a griffin and a tiger attack an antelope with its head turned back. The upper register shows two scorpions and a frog; the lower register shows a scorpion and two fishes.Syro Mitannian, fifteenth to fourteenth centuries BCE, Pierpont Morgan Library, New York. [After Fig. 9 in: Jack M. Sasson (ed.), *Civilizations of the Ancient Near East*, p.2705].

Rhinoceros elephant lizard.Tell Asmar (Eshnunna) Iraq. IM 14674; glazed steatite; Frankfort 1955 No. 642; Collon 1987 Fig. 610.

Ur, Iraq; BM 123195; clay, half missing; Collon, 1987, Fig. 613. Probably originated in the east (exact location unknown).

A person with a vase with overflowing water; sun sign. C. 18th cent. BCE. [E. Porada,1971, Remarks on seals found in the Gulf states, *Artibus Asiae*, 33, 31-7].

Early Harappan bowl. Fish. [After Fig. 23.35 in, Asko Parpola, New correspondences between Harappan and near Eastern glyptic art, in: in B. Allchin, ed., *South Asian Archaeology*, 1981, Cambridge].

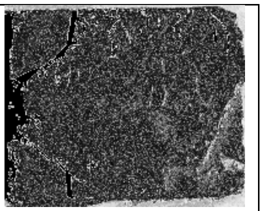
Seal impression; Dept. of Antiquities, Bahrain; three Harapan-style bulls

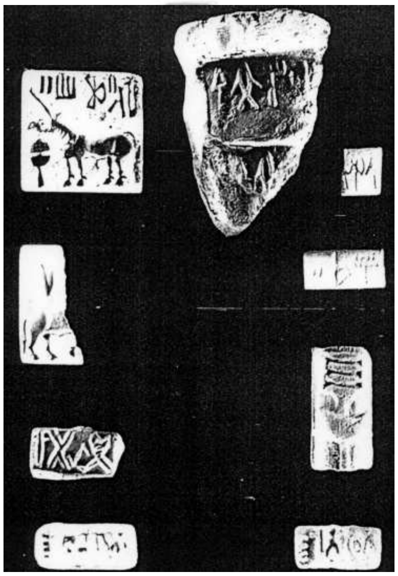
Nippur; ca. 13th cent. BC; white stone; zebu bull and two pictograms

Tree in front. Fish in front of and above a one-horned bull. Cylinder seal impression (IM 8028), Ur, Mesopotamia. White shell. 1.7 cm. High, dia. 0.9 cm. [Cf. Mitchell 1986 Indus and Gulf type seals from Ur: 280-1, no.8 and fig. 112; Shaikha Haya Ali Al Khalifa and Michael Rice, 1986, *Bahrain through the ages: the archaeology*, London: 280-1, no.8 and fig. 112]. cf. Gadd, PBA 18 (1932), pp. 7-8, pl. I, no.7;; Parpola, 1994, p. 181; fish vertically in front of and horizontally above a unicorn; trefoil design

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Terracotta sealing depicting an inscription 2600 BCE Western UP Saharanpur (After Manoj Kumar Sharma). [Source: Page 32 in: Deo Prakash Sharma 2000 *Harappan seals sealings and copper tablets* Delhi National Museum].





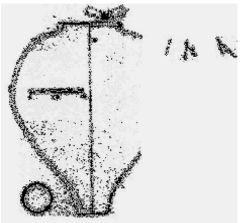
Stamp seals in Metropolitan Museum of Art, New York. 49.40.1 to 3. All three samples show a bull.

"Rendered in strict profile, standing before what might be an altar, the bull is by far the most popular motif in the Indus Valley glyptic art; there is virtually nov ariation in either the style or the iconographic details among the individual examples. The shoulder of the bull is emphasized by an upside-down doubly outlined heart shape that has been interpreted as painted decoration on the body of the bull, but is more likely an artistic convention for representing the muscles of the bull's shoulder."[After Fig. 38 in Holly Pittman, 1984, p. 84].

Harappa. Inscribed objects ca. 2600-1900 BCE. Clockwise from top left: steatite seal, terracotta sealing, two incised steatite tablets, four different types of molded faience tablets, earliest Harappan seal fragment (H90-1600; dating to around 2600 BCE). "The bold, angular carving on the seal shows only a single sign and the rear end of a large animal, possibly a buffalo or a short-horned humpless bull…Most examples (around 3,700) of Indus writing come from the excavations of Mohenjo-daro and Harappa, but some 60 different sites throughout the Indus Valley have contributed one or more objects with script." [Dales and Kenoyer 1991: fig. 13.44; After Fig. 4.1 in: JM Kenoyer, 1998, p. 70].

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Line drawing of a black-slipped jar with both pre-firing and post-firing inscriptions. [After Fig. 4.8b in JM Kenoyer, 1998].

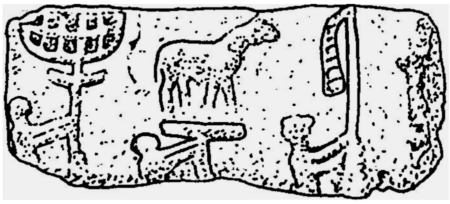


Nausharo. Terracotta mold. Script incised prior to firing on the exterior of the mold used to make large globular jars (10 cm ht. NS III 87 (32) 153, Department of Archaeology, EBK 5996). [After Fig. 4.7 in JM Kenoyer, 1998].

Mohenjo-daro. Silver seal (After Mackay 1938, vol. 2, Pl. XC,1; XCVI, 520). Two silver seals at Mohenjo-daro, two copper seals at Lothal and at Ras al-Junayz in Oman are rare uses of metal for making seals.

Ras-al-Junayz. Copper seal.

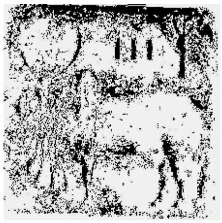
Eight inscribed copper tablets were found at Harappa and all were made with raised script, a technique quite different from the one used at Mohenjo-daro for flat copper tablets with many duplicates. Harappa. Raised script. H94-2198. [After Fig. 4.14 in JM Kenoyer, 1998]. The duplicates occur on steatite and faience tablets at Harappa; these may have represented **a commodity or a value.** [cf. JM Kenoyer, 1998, p. 74].



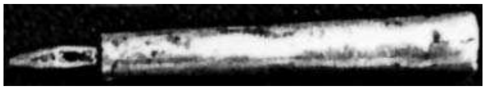
Mohenjo-daro. A procession depicted on a terracotta tablet. [After Marshall 1931, Pl. CXVIII,9; cf. Fig. 5.6 in JM Kenoyer, 1998]. Is this a representation of a public ceremony which included carrying standards topped by objects representing important motifs of the civilization? Not all animals with which the people of SSVC were familiare are used as pictorial motifs; for example, they were familiar with peacocks, hooded cobras, monkeys, squirrels, mongooses and onagers (wild asses); the pictorial representations of these animals are not found on the square stamp seals.

Harappa. Standard device shown on faience tablets (left: H90-1687, right, H93-2051) and carved in ivory (centre, H93-2092). [After Fig. 5.12 in JM Kenoyer, 1998]. The miniature replica object has been recovered in 1993 from excavations at Harappa. This may be an ivory replica of a device made of basketry and wood. This replica shows a hemispherical lower basin with dotted circles and a cylindrical top portion with cross-hatching. The shaft extending from the base seems to be broken on this replica. Is this a yu_pa carried in processions?

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



Harappa. Steatite seal. H88-1201 [After Fig. 5.7 in JM Kenoyer, 1998] The two signs inscribed on the seal also occur with other pictorial motifs and hence not related to the zebu bull motif.



Golden pendant with inscription from jewelry hoard at Mohenjo-daro. Drawing of inscription that encircles the gold ornament. Needle-like pendant with cylindrical body. Two other examples, one with a different series of incised signs were found together. The pendant is made from a hollow cylinder with soldered ends and perforated point. Museum No. MM 1374.50.271; Marshall 1931: 521, pl. CLI, B3. [After Fig. 4.17a, b in: JM Kenoyer, 1998, p. 196].

Harappa. Cylindrical and twisted rectangular terracotta tablets. [After Fig. 4.13 in JM Kenoyer, 1998].

Column 1: Grapheme horned U 'fish'; Allograph variants of a single sign; circumgraph enclosure signs; ligature papal leaf and box; Column 2: ideograph 'hunting'; logograph adze. [After Fig. 4.6 in JM Kenoyer, 1998].

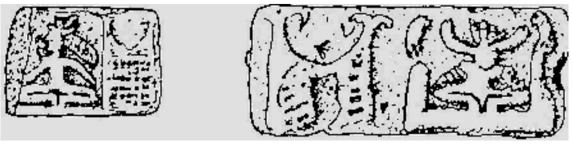
Gold fillet depicting the standard device, Mohenjo-daro, 2600 BCE. [Source: Page 32 in: Deo Prakash Sharma, 2000, *Harappan seals, sealings and copper tablets*, Delhi, National Museum]. At *a* Marshall, *MIC*, Pl. CLI are specimens of fillets consisting of thin bands of beaten gold with holes for cords at their ends.

Fillet on the fore-head of the priest statuette, 2700 BCE. Stone. Mohenjo-daro. Karachi Museum. The priest wears a fillet similar to the two fillets of gold which bears the standard device embossed on them. The fillets of gold were discovered at Mohenjo-daro. Similar gold ornaments with embossed standard devices were also reported from an Akkadian burial site in West Asia. [Source: Page 22, Fig. 12 in: Deo Prakash Sharma, 2000, *Harappan seals, sealings and copper tablets*, Delhi, National Museum].

The central ornament worn on the forehead of the famous "priest-king" sculpture from Mohenjo-daro appears to represent an eye bead, possibly made of gold with steatite inlay in the center

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

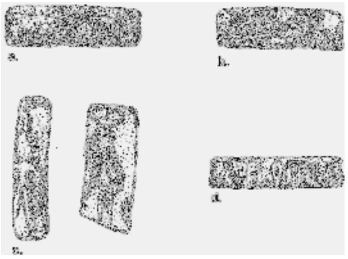
Mohenjo-daro. Female figurine adorned with six strands of necklaces, chokers and pendant bead [After Fig. 6.16 in JM Kenoyer, 1998].



See a woman's head in diorite found in Nin-Gal temple at Ur, ca. 2150 B.C.; note the engraved modulations of the hair, elaborate bun at the back of the head and the fillet around the forehead.

Harappa. Two tablets. Seated figure or deity with reed house or shrine at one side. Left: H95-2524; Right: H95-2487.

Harappa. Planoconvex molded tablet found on Mound ET. A. Reverse. a female deity battling two tigers and standing above an elephant and below a six-spoked wheel; b. Obverse. A person spearing with a barbed spear a buffalo in front of a seated horned deity wearing bangles and with a plumed headdress. The person presses his foot down the buffalo's head. An alligator with a narrow snout is on the top register. "We have found two other broken tablets at Harappa that appear to have been made from the same mold that was used to create the scene of a deity battling two tigers and standing above an elephant. One was found in a room located on the southern slope of Mount ET in 1996 and another example comes from excavations on Mound F in the 1930s. However, the flat obverse of both of these broken tablets does not show the spearing of a buffalo, rather it depicts the more well-known scene showing a tiger looking back over its shoulder at a person sitting on the branch of a tree. Several other flat or twisted rectangular terracotta tablets found at Harappa combine these two narrative scenes of a figure strangling two tigers on one side of a tablet, and the tiger looking back over its shoulder at a figure in a tree on the other side." [JM Kenoyer, 1998, p. 115].



Harappa. A series of small tablets. A. man fighting a short-horned bull; a small plant with six branches; b. seated figure in yogic posture with arms resting on knees; both arms covered with bangles; traces of a horned headdress and long hair are visible on some impressions; a second individual, also with long hair and wearing bangles, sits on a short stool; ; c. standing deity with horned headdress with a curved branch with three projecting leaves; bangles visible on both arms; d. inscription with six signs; the first sign appears to be some form of an animal; the last shows a person.

Many of the finds during 1995-1998 excavations at Harappa have been exquisitely photographed. The following are samples.

Slide 124 The origins of Indus writing can now be traced to the Ravi Phase (c. 3300-2800 BC) at Harappa. Some inscriptions were made on the bottom of the pottery before firing. Other inscriptions such as this one were made after firing. This inscription (c. 3300 BC) appears to be three plant symbols arranged to appear almost anthropomorphic.

Slide 133. A steatite unicorn seal from Harappa with Indus script. This seal was found in the central area of Mound E and dates to Period 3B or early 3C, around 2450-2200 BC. When pressed into clay the impression will be reversed. Since the Indus script may have been read from right to left, the last two signs visible at the top right hand edge of the seal would in fact be the last two signs of the inscription.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Slide 135 Many large storage jars of the Harappa Phase (2600-1900 BC) have writing inscribed along the upper portion of the vessel. This inscription includes a figure of a man with the bow and arrow sign in each hand. It is impossible to shoot two bows and arrows at the same time so this is clearly not a pictograph, but rather a combined symbol used as part of a Indus writing system.

Slide 137. This Early Harappan seal impression or sealing of a square seal has several script signs and two ladder like motifs (Kot Diji Phase, c. 2800 BC). The wet clay was probably placed on a bundle of goods to seal it and then was broken off when the bundle was opened. Since this sealing was found in a hearth area, it is probable that the raw clay was hardened accidentally when it was swept into the fire along with other trash, possibly even the rope or reeds used to bundle the goods.

Slide 146. Sixteen three sided tablets (c. 2300 BC) with incised inscription on each face were found all together in the debris that had been dumped over the curtain wall. On one of the three sides is an inscription that is identical to the last two signs on the seal (145).

Slide 154. Unicorn seal from Trench 37, which lies to the east of the "Granary." This type of seal comes from levels dating to Harappa Phase Period 3B. Similar seals were found near the "granary" in 1997.

Slide 156. This type of seal is only found in the last part of the Harappan Phase, Period 3C. A similar rectangular seal was found on Mound F in the 1998 excavations of the circular platforms (Trench 43).

Seal 160. Seal fragment of a man with double bun and three fingered hand or trident. Trench 39 North, upper levels, Harappa Phase..

Sign 134. Three signs are inscribed on this rim sherd of the Early Harappan Period (Kot Dijian Phase), dating to around 2800 BC. Two of the signs appear to be pictographs for a bow and arrow, but they probably had some other meaning that was defined by the diagonal slash at the end of the sequence of symbols. The bow and arrow sign is quite common in the later Indus script (see 135).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Slide 138. Three clay sealings from the Harappa Phase levels (2600-1900 BC) that may have come from large bundles of goods shipped to the site from a distant region. The clay does not appear to be the same type of clay as found near Harappa and each sealing has the impression of two different seals.

Slide 142. Molded tablets from Trench 11 sometimes have impressions on one, two, three or four sides. This group of molded tablets shows the complete set of motifs. One side is comprised entirely of script and has six characters, the first of which (on the very top) appears to be some sort of animal. A second side shows a human figure grappling with a short horned bull. A small plant with at least six branches is discernible behind the individual. The third panel portrays a figure seated on a charpoy or throne in a yogic position, with arms resting on the knees. Both arms are covered with bangles, and traces of a horned headdress and long hair are visible on some of the impressions. A second individual, also with long hair and wearing bangles, is seated on a short stool to the proper left of the individual on the "throne." The fourth panel shows a deity standing with both feet on the ground and wearing a horned headdress. A branch with three pipal leaves projects from the center of the headdress. Bangles on seen on both arms.

Seal 145. A square steatite unicorn seal with a unique inscription was found in the street debris on the inside of the city wall. The two sets of signs on the right hand side of the seal would appear in reverse, i.e. be on the left, when it was pressed into clay. Harappan Period, c. 2300 BC. (More unicorn seals at 133, 154.)

Slide 151. These two inscribed tablets (c. 2300 BC) have the same inscription, but it was written in opposite directions. What is even more interesting is that the top tablet is incised with the same "handwriting" as the Group 2 tablets described in (149). The bottom tablet belongs to the handwriting of Group 1 of the inscribed tablets (149).

Inscribed objects from Harappa 2000-2001 (Jonathan Mark Kenoyer and Richard H. Meadow)

Slide 185 Molded terracotta tablet (H2001-5075/2922-01) with a narrative scene of a man in a tree with a tiger looking back over its shoulder. The tablet, found in the Trench 54 area on the west side of Mound E, is broken, but was made with the same mold as ones found on the eastern side of Mound E and also in other parts of the site (see slide 89 for the right hand portion of the same scene). The reverse of the same molded terra cotta tablet shows a deity grappling with two tigers and standing above an elephant (see slide 90 for a clearer example from the same mold). Slide 90

Slide 191 In one of the rooms uncovered in Trench 54, a pottery fragment with a sunburst painted decoration was discovered that could be dated to the the beginning of the Harappan Period, perhaps as early as 2600 BC.

Sli

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

de 187 A faience button seal with geometric motif (H2000-4491/9999-34) was found on the surface of Mound AB at Harappa by one of the workmen.

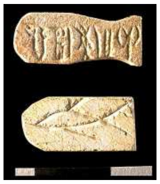
Slide 203. Steatite button seal Fired steatite button seal with four concentric circle designs from the Trench 54 area (H2000-4432/2174-3).

Slide 204 sealing. Low fired sealing in terra cotta of a unicorn seal from the Trench 54 area (H2000-4453/2174-192). This type of clay sealing was used to seal bundles of goods for transport.

Slide 205 Faience tablet or standard. This unique mold-made faience tablet or standard (H2000-4483/2342-01) was found in the eroded levels west of the tablet workshop in Trench 54. On one side is a short inscription under a rectangular box filled with 24 dots. The reverse has a narrative scene with two bulls fighting under a thorny tree.

Slide 206 Tablet with script. Mold-made faience tablet with script found in the eroded surface debris of Trench 54 (H2000-4484/2227-15).

Slide 208 Two steatite tablets. Two inscribed and baked steatite tablets from the Trench 54 area. One has the shape of a fish (H2000-4452/2174-191), while the other has a fish sign inscription (H2000-4477/2227-11).



Slide 209 Inscribed **lead** celt. Inscribed lead celt or ingot fragment from the Trench 54 area (H2000-4481/2174-321). The object was apparently chiseled to reduce its size. Lead may have been used as an alloy with copper, for making pigments, or as medicine.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

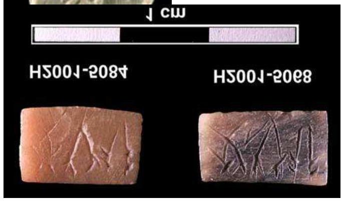
Slide 207 Tablet with inscription. Twisted terra cotta tablet (H2000-4441/2102-464) with a mold-made inscription and narrative motif from the Trench 54 area. In the center is the depiction of what is possibly a deity with a horned headdress in so-called yogic position seated on a stool under an arch.

Slide 244 Broken steatite mold. Broken steatite mold carved into a unique fan-shape. (H2001-5069/2913-02). This mold was probably used to make a faience tablet that was found on the eroded slope to the south of the workshop in Trench 54 South (Slide 245).

Slide 245 Molded faience tablet. Fan-shaped molded faience tablet found on the eroded slope south of the Trench 54 South workshop. It was probably made using the steatite mold found in the workshop (Slide 244).

Slide 247 Faience tablet. Faience tablet (H2001-5082/2920-02) made from two colors of faience was found eroding from the Trench 54 South workshop area. Identical tablets made from two colors of faience were recovered in Area J, at the south end of Mound AB, in the excavations of Vats during the 1930s.

Slide 248 Unique two-ed tablet. This uniquely shaped tablet (H2001-5090/2913-09), also made with two colors of faience, has an inscription similar to that seen on the pervious slide (247). This tablet was found inside the workshop in Trench 54 South.



Slide 249 Inscribed steatite tablets. Inscribed steatite tablets made from two different colors of steatite have the same inscription. The sloppy nature of the inscription may be the reason why these tablets were discarded. Both tablets, incised on one side only, were found in the same excavation unit in the Trench 54 South steatite and faience workshop. (H2001-5084/2913-07 and H2001-5068/2913-01).

Stamp seal and a modern impression: unicorn or bull and inscription,, Mature Harappan period, ca. 2600–1900 B.C. Indus Valley Burnt steatite; 1 1/2 x 1 1/2 in. (3.8 x 3.8 cm)

http://www.metmuseum.org/toah/ho/02/ssa/ho_49.40.1.htm "Stamp seals were used in antiquity as marks of ownership and badges of status. In the large urban centers of the Harappan civilization, hundreds of square-shaped stamp seals were found in excavations. They are engraved with images of wild or domestic animals, humans, fantastic creatures, and possibly divinities. The bull is the most popular animal motif on the Indus Valley glyptic art. In this example, the animal is rendered in the typical strict profile, standing before what might be an altar. Its shoulder is covered by a decorated quilt or harness in the shape of an upside-down heart pattern. Most of the square stamp seals have inscriptions along the top edge. The Indus script, invented around 2600 B.C., is yet to be fully deciphered."

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Manuscripts in Schoyen Collection

Some manuscripts available in the Schoyen Collection. Located mainly in London and Oslo. URL http://www.nb.no/baser/schoyen/contentnew3.html "The Schøyen Collection comprises most types of manuscripts from the whole world spanning over 5000 years. It is the largest private manuscript collection formed in the 20th century. The whole collection, MSS 1-5245, comprises 13,010 manuscript items, including 2,172 volumes. 6,510 manuscript items are from the ancient period, 3300 BCE – 500 CE. For scholarly research and access the collection is a unique source, uniting materials usually scattered world wide to two locations only. These MSS are the world's heritage, the memory of the world. They are felt not really to belong to The Schøyen Collection and its owner, who only is the privileged, respectful and humble keeper, neither do they belong to a particular nation, people, religion, culture, but to mankind, being the property of the entire world. In the future The Schøyen Collection will have to be placed in a public context that can fulfil these visions…The Schøyen Collection is located mainly in Oslo and London. Scholars are always welcome, and are strongly encouraged to do research and to publish material."
Source:http://www.nb.no/baser/schoyen/intro.html#1.1

Included in the 6,510 manuscript from the ancient period, 3300 BCE - 500 CE are the following epigraphs which are closely associated with the script of the Sarasvati Civilization.

MS 249 Unidentified Minoan text. Knossos, Crete, 16th cent. BCE, Linear A script?

MS in Minoan on clay, Knossos, Crete, 16th c. BC, 1 black roundel, 3,0x2,7 cm, 4 characters of late Minoan I Linear A script, 2 impressions (1,6x1,0 cm) on opposite edges by an amygdaloid seal with head of papyrus plant.

Provenance: 1. Possibly the archive in the West Wing of the Knossos Palace (16th c. BC - ca. 1950); 2. Erlenmeyer Collection, Basel, CMS no. 120 (until 1981); 3. Erlenmeyer Foundation, Basel (1981-1988); 4. Christie's 5.6.1989:99.

Commentary: The famous Linear B script of the Mycenean kings, consisting of syllabic signs, ideograms and numerals, resisted decipherment for a generation. When Michael Ventris deciphered it in 1952, the achievement was called the "Everest" in classical archaeology. The language was archaic Greek. Linear A, the earliest script of Europe, has so far resisted all attempts of decipherment, partly because the language is unknown, and the material small, ca. 700 copies only, while Linear B is known in 12,000 - 13,000 examples. This roundel is the only one in private ownership. Outside the Greek museums, they are, in fact, represented in 2 Italian museums only. KN Wc 26 in Erik Hallager: The Knossos roundels, BSA 82(1987).

This MS has signs which are comparable with the signs on epigraphs of Sarasvati-Sindhu Civilization.

MS 4625 Cylinder seal with a scene of drinking from a straw, Pakistan ca. 1500-500 BCE

Seal of hard red stone, Coast between Indus and the Persian Gulf, Pakistan, ca. 1500-500 BC, 1 cylinder seal matrix, diam. 1,3x3,2 cm, figure sitting left, holding a long straw from his mouth to a pot with bulbous body and narrow neck, resting on a stand; behind him a servant holding up a fan; behind the servant another standing person grasping a small quadruped. Above and below him 3 other quadrupeds. Between the 2 main figures a solar disc with rays and a crescent and a full moon combined.

Provenance: 1. Found in Baluchistan?, Pakistan (1965); 2. The Waria Collection, Dadu, Pakistan (ca. 1965-2001).

Commentary: Drinking beer from a straw is known from Sumer ca. 2700 BC on, but usually a big pot from which a number of persons are all drinking through their own straws. The fan is known in Iranian seals of ca.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

1300-1100 BC. While the scene as a whole is Near Eastern, the dress and anklets of the servant is clearly of Indian type. The iconography combined is thus unique.

MS 4602 Indus Valley cylinder seal, ca. 3000 BCE depicting a palm tree and a man between two lions with wings and snakeheads, holding one arm around each, two long fish below, and one fish jumping after one lion's tail or the tail of a sitting monkey above it

Seal matrix on creamy stone or shell, Indus Valley, Pakistan, ca. 3000 BC, 1 cylinder seal, diam. 2,0x3,7 cm, in fine execution influenced by the Jemdet Nasr style of Sumer.
Provenance: 1. Found in Mehrgarh, Pakistan; 2. The Waria Collection, Dadu, Pakistan (-2001).
Commentary: Similar fish can be found on Indus Valley pottery from the period and later

http://www.nb.no/baser/schoyen/5/5.6/index.html#4602

MS 4617 Pakistan, ca. 2200-2000 BCE
White steatite, 1 square seal matrix, 4,3x4,3x1,9 cm, 6 Indus Valley signs in a formal script of high quality, unicorn standing left facing an altar, with loop handle.
Provenance: 1. The Waria Collection, Dadu, Pakistan (-2001).
Commentary: This seal is among the largest extant. The execution is representing Indus art at its best. The Indus script is still undeciphered, as is the Linear A script from Crete and the Rongo-Rongo script from Easter Island, which has numerous signs in common with the Indus script.

MS 4619, Pakistan, ca. 2200-1800 BCE
White coated grey steatite, Mohenjo-Daro?, Indus Valley, Pakistan, ca. 2200-1800 BC, 1 round seal matrix, diam. 2,3x1,5 cm, 5 Indus Valley signs, bison left eating from a trough, with double loop handle.
Context: Only 2 more round seals with inscriptions are known, both with bison and from Mohenjo-Daro (M-415 and M-416).
Provenance: 1. The Waria Collection, Dadu, Pakistan (1960'ies-2001).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

MS5059 Pakistan, ca. 2200-1800 BCE
White steatite, Mohenjo-Daro, Indus Valley, 2200-1800 BC, 1 square stamp seal matrix, 3,4x3,4x1,7 cm, 9 Indus valley signs

Provenance: 1. Found in Mohenjo-Daro (ca. 1950-1970); 2. The Waria Collection, Dadu, Pakistan (-2001).

MS5061 Pakistan, ca. 2200-1800 BCE
White steatite, Mohenjo-Daro, Indus Valley, 2200-1800 BC, 1 square stamp seal matrix, 2,4x2,5x1,2 cm, 3 Indus valley signs
Provenance: 1. Found in Mohenjo-Daro (ca. 1950-1970); 2. The Waria Collection, Dadu, Pakistan (-2001).

MS5062 Pakistan, ca. 2200-1800 BCE

White steatite, Mohenjo-Daro, Indus Valley, 2200-1800 BC, 1 square stamp seal matrix, 2,7x2,7x1,6 cm, 4 Indus valley signs
Provenance: 1. Found in Mohenjo-Daro (ca. 1950-1970); 2. The Waria Collection, Dadu, Pakistan (-2001).

MS5065 Pakistan, ca. 1800 BCE

MS Indus Valley language on copper, Mohenjo-Daro, Indus Valley, ca. 1800 BC, 1 square stamp seal matrix, 1,3x1,3x0,9 cm, 3 Indus valley signs in script
Provenance: 1. Found in Mohenjo-Daro (ca. 1950-1970); 2. The Waria Collection, Dadu, Pakistan (-2001).
Commentary: There is only one similar seal known, from Lothal (L-44).

Parallels from Mesopotamia (and Anatolia)

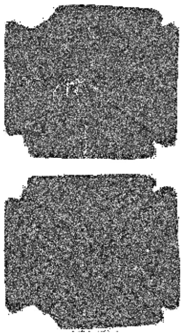
Administrative tablet with cylinder seal impression of a male figure, hunting dogs, and boars, 3100–2900 B.C.; Jemdet Nasr period (Uruk III script) Mesopotamia Clay; H. 2 in. (5.3 cm) The seal impression depicts a male figure guiding two dogs on a leash and hunting or herding boars in a marsh environment.

Cylinder seal and modern impression: hunting scene, 2250–2150 B.C.; late Akkadian period Mesopotamia Chert; H. 1 1/16 in. (2.8 cm) This seal, depicting a man hunting an ibex in a mountain forest, is an early attempt to represent a landscape in Mesopotamian art. It was made during the Akkadian period (ca. 2350–2150 B.C.), during which the iconographic repertory of the seal engraver expanded to include a variety of new

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

mythological and narrative subjects. The owner of the seal was Balu-ili, a high court official whose title was Cupbearer. http://www.metmuseum.org/toah/ho/02/wam/hod_41.160.192.htm

Shaft-hole axhead with a bird-headed demon, boar,and dragon, late 3rd–early 2nd millennium BCE Central Asia (Bactria-Margiana) Silver, gold foil; 5 7/8 in. (15 cm) "Western Central Asia, now known as Turkmenistan, Uzbekistan, and northern Afghanistan, has yielded objects attesting to a highly developed civilization in the late third and early second millennium B.C. Artifacts from the region indicate that there were contacts with Iran to the southwest. Tools and weapons, especially axes, comprise a large portion of the metal objects from this region. This shaft-hole axhead is a masterpiece of three-dimensional and relief sculpture. Expertly cast in silver and gilded with gold foil, it depicts a bird-headed hero grappling with a wild boar and a winged dragon. The idea of the heroic bird-headed creature probably came from western Iran, where it is first documented on a cylinder seal impression. The hero's muscular body is human except for the bird talons that replace the hands and feet. He is represented twice, once on each side of the ax, and consequently appears to have two heads. On one side, he grasps the boar by the belly and on the other, by the tusks. The posture of the boar is contorted so that its bristly back forms the shape of the blade. With his other talon, the bird-headed hero grasps the winged dragon by the neck. The dragon, probably originating in Mesopotamia or Iran, is represented with folded wings, a feline body, and the talons of a bird of prey."



Stamp seal, quatrefoil/maltese cross with infill, whip or snake

MS on grey steatite, North Syria/North Iraq/Iran, 5th millennium BC, 1 square stamp seal, 3,0x3,5x0,6 cm, 1 pictographic sign on reverse, pierced through.
Provenance: 1. Erlenmeyer Collection, Basel (before 1958-1981); 2. The Erlenmeyer Foundation, Basel (1981-1997); 3. Sotheby's 12.6.1997:6.

Stamp seal, standing male figure between two horned quadrupeds back to back and head to end

MS on speckled dark-olive steatite or chlorite, North Syria/Iraq/Iran, 5th-4th millennium BC, 1 circular stamp seal, diam. 8,4x1,3 cm, pierced through.
Provenance: 1. Erlenmeyer Collection, Basel (before 1958-1981); 2. The Erlenmeyer Foundation, Basel (1981-1997); 3. Sotheby's 12.6.1997:10.
Commentary: The earliest stamp seals of Sumer had various geometric patterns, later more elaborate designs and illustrations like the present seal, as a proof of identity and ownership. These can, together with the counting tokens, possibly be considered forerunners to the pictographic script of ca. 3200 BC. http://www.nb.no/baser/schoyen/5/5.6/#2411

Stamp seal, large ibex walking left

MS on black steatite or chlorite, North Syria or Anatolia, 4th millennium BC, 1 rectangular gabled stamp seal, 4,7x5,1x1,3 cm, pierced through.
Provenance: 1. Erlenmeyer Collection, Basel (before 1958-1981); 2. The Erlenmeyer Foundation, Basel (1981-1997); 3. Sotheby's 12.6.1997:8.

MS 4631 Bulla-envelope with 11 plain and complex tokens inside, representing an account or agreement, tentatively of wages for 4 days' work, 4 measures of metal, 1 large measure of barley and 2 small measures of some other commodity

Bulla in clay, Adab, Sumer, ca. 3700-3200 BC, 1 spherical bulla-envelope (complete), diam. ca. 6,5 cm, cylinder seal impressions of a row of men walking left; and of a predator attacking a deer, inside a complete set of plain and complex tokens: 4 tetrahedrons 0,9x1,0 cm (D.S.-B.5:1), 4 triangles with 2 incised lines

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

2,0x0,9 (D.S.-B.(:14), 1 sphere diam. 1,7 cm (D.S.-B.2:2), 1 cylinder with 1 grove 2,0x0,3 cm (D.S.-B.4:13), 1 bent paraboloid 1,3xdiam. 0,5 cm (D.S.-B.8:14).

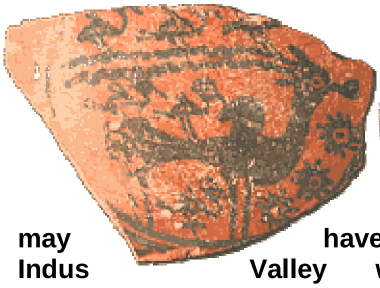
Context: MSS 4631-4646 and 5114-5127are from the same archive. Only 25 more bulla-envelopes are known from Sumer, all excavated in Uruk. Total number of bulla-envelopes worldwide is ca. 165 intact and 70 fragmentary.

Commentary: While counting for stocktaking purposes started ca. 8000 BC using plain tokens of the type also represented here, more complex accounting and recording of agreements started about 3700 BC using 2 systems: a) a string of complex tokens with the ends locked into a massive rollsealed clay bulla (see MS 4523), and b) the present system with the tokens enclosed inside a hollow bulla-shaped rollsealed envelope, sometimes with marks on the outside representing the hidden contents. The bulla-envelope had to be broken to check the contents hence the very few surviving intact bulla- envelopes. This complicated system was superseded around 3500-3200 BC by counting tablets giving birth to the actual recording in writing, of various number systems (see MSS 3007 and 4647), and around 3300-3200 BC the beginning of pictographic writing.

	Unicorn seal ROM 996.74.5 Royal Ontario Museum, Canada		**Seal impression. Royal Ontario Museum, Canada (No ROM number)**

MS 2645 Indus valley script, and old akkadian illustration. North West Afghanistan, ca. 21st cent.

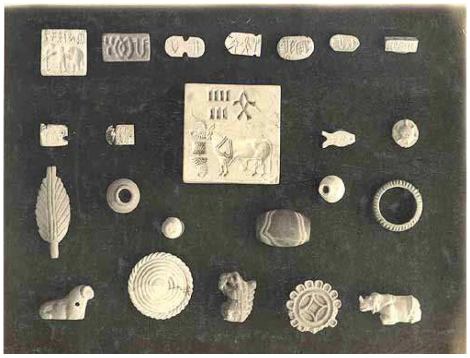
This seal links Indus Valley and Old Akkadian civilizations. The seal is of blue stone, North West Afghanistan, ca. 23rd-21st c. BC, 1 cylinder seal, 3,9x2,7 cm, 5 Indus valley signs, illustration standing archer aiming his bow at a falling boar, in the style of the best Old Akkadian art in Sumer.



Harappa, potsherd.

Experts believe that this seal may have been used by a merchant from the Indus Valley who was living in Bahrein or Babylon. This seal was found in the Mesopotamian city of Babylon. The seal shows a bull and has a short inscription in the Indus Valley script. However, it is not square like seals from the Indus Valley. It is round with a knob on the back, which is more like seals from the Gulf island of Bahrein which date from about 2000 B.C. Other seals like this were found in the Sumerian city of Ur. A copy of a square, Indus-type seal with a picture of a bull was also found at Ur. However, this seal had an inscription in cuneiform script rather than in the Indus Valley script.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



Harappa, seals, sealings and other miscellaneous objects of faience, stone, etc. selected for the Burdin Fine Arts Exhibition

http://www.photocentralasia.com/specialex/specialexphotos06.html

A group of six steatite seals, each with a depiction of an ox before an altar beneath a row of pictographic symbols; the reverse with a pierced boss.

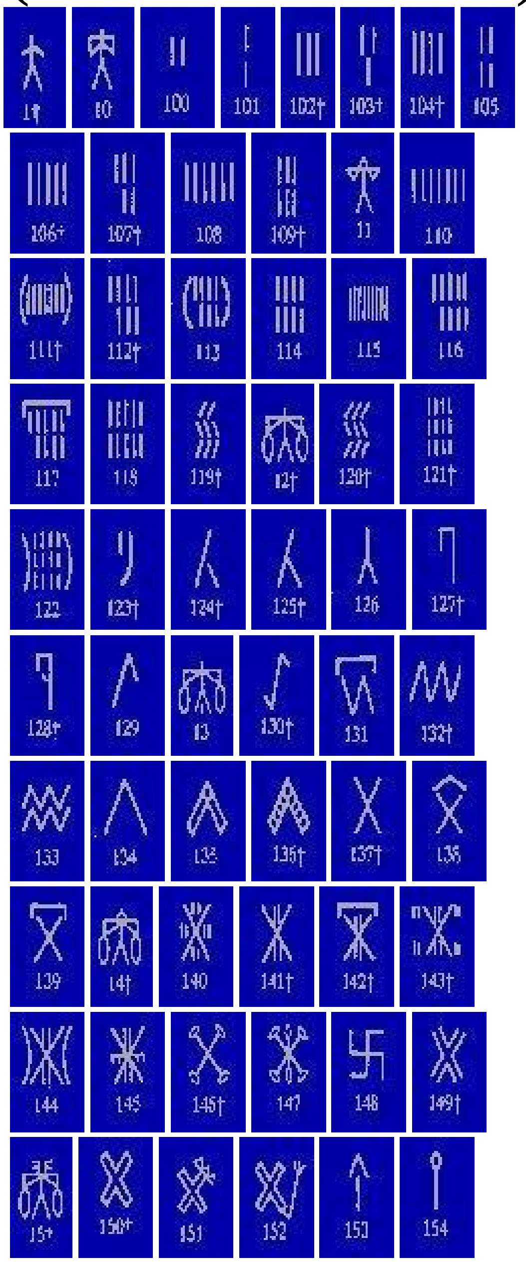
http://www.asianartresource.co.uk/mall/asianartresourcecouk/products/product-823937.stm

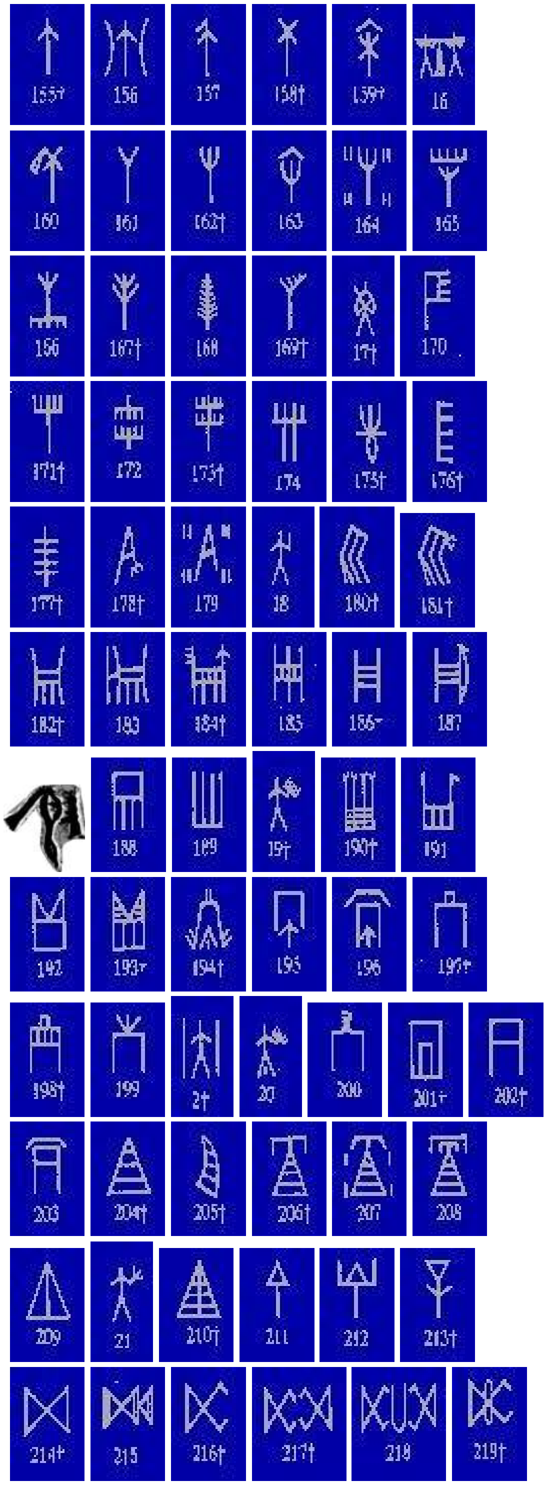
Steatite seals in the British Museum

			(British Museum1892-12-10, 1)

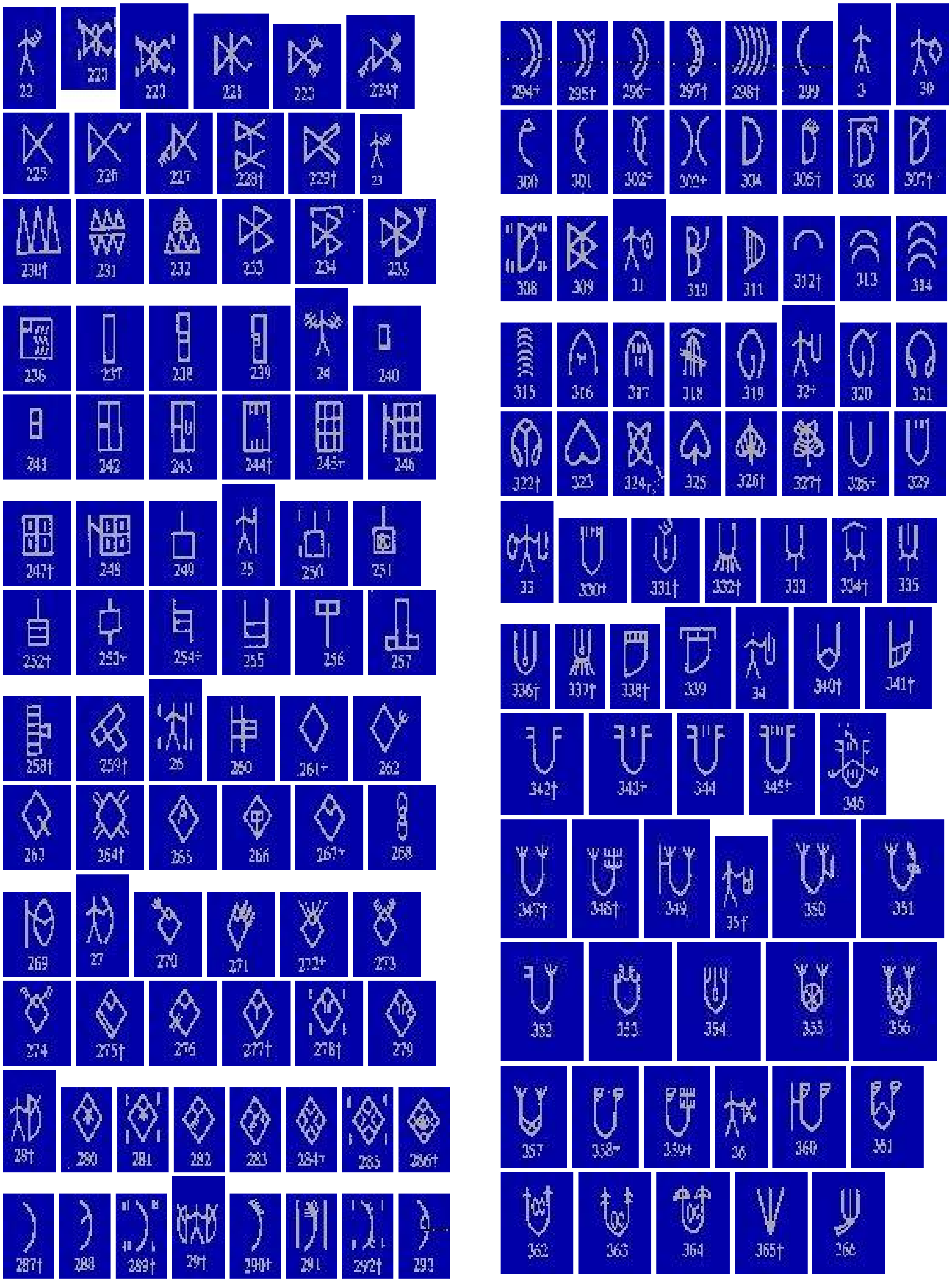
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Hieroglyph Sign List (After Mahadevan)

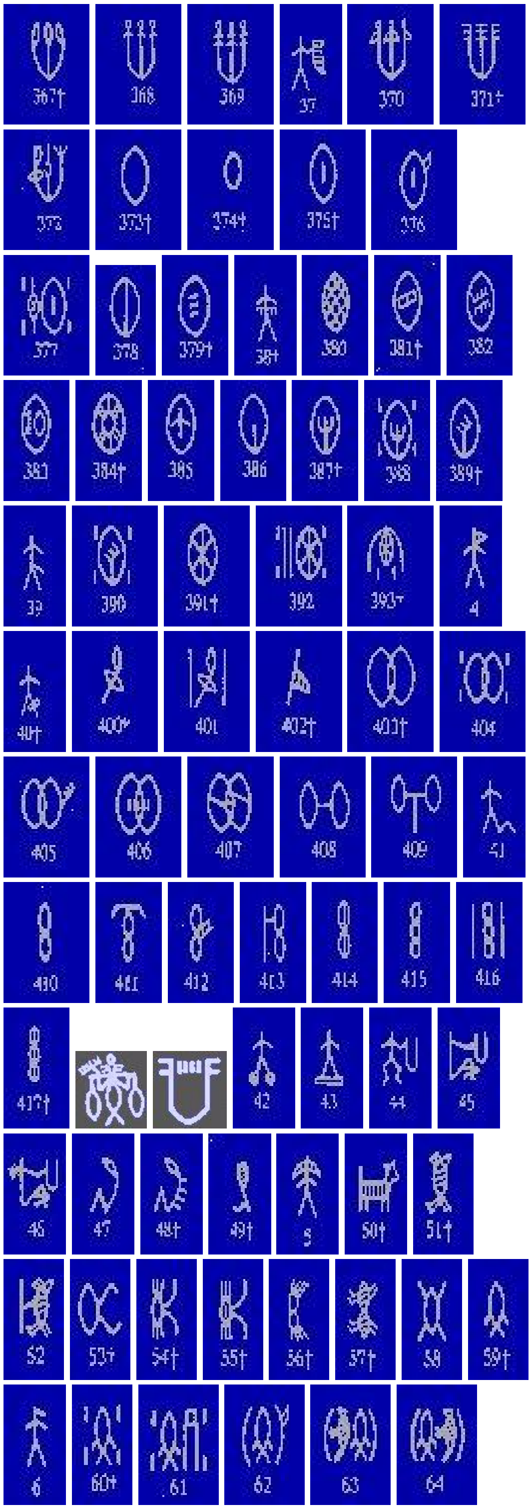


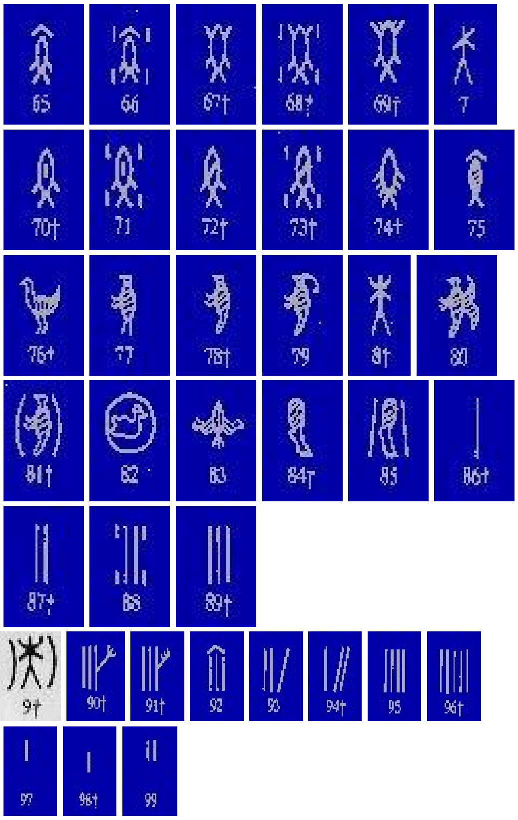


PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

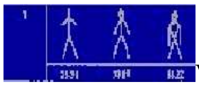


PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

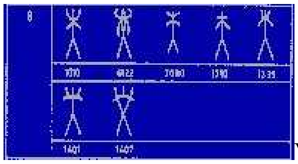


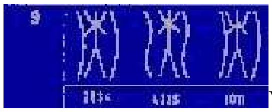


Sign Variants

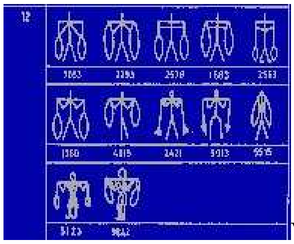

V001

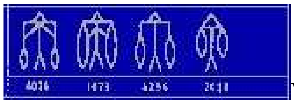
V002

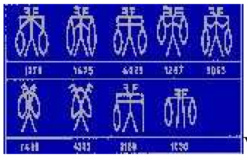

V008

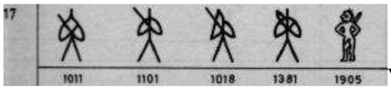

V009

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

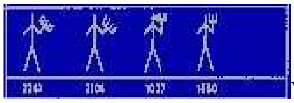

V012

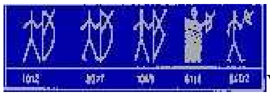

V014


V015



V017

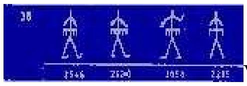

V019


V028

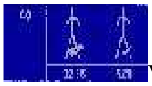
V029

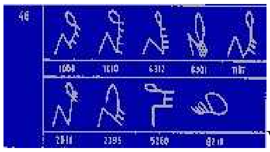
V032

V035

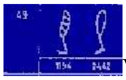
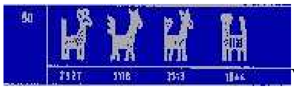
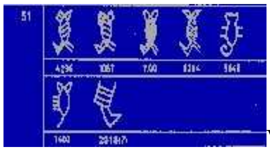

V038

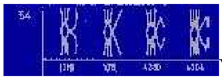
V039

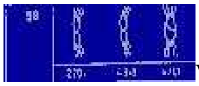
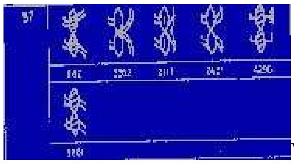
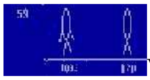
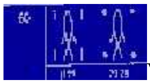
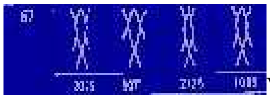
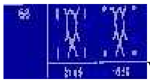
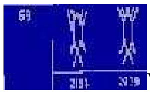
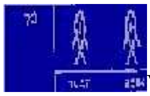
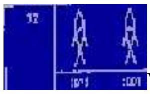
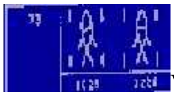
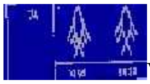
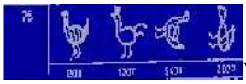

V040

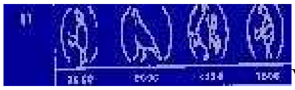
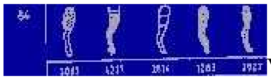
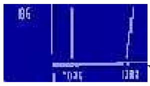
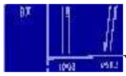
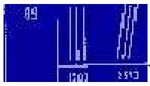
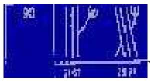

V048

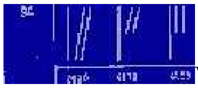
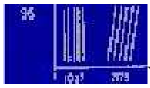
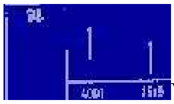
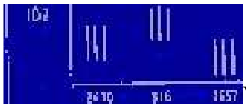
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com


V049

V050

V051

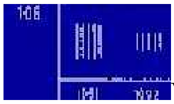
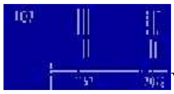
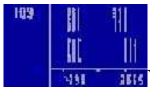
V053

V054

V055

V056

V057

V059

V060

V067

V068

V069

V070

V072

V073

V074

V076

V078

V081

V084

V086

V087

V089

V090

V091

V094

V096

V098

V102

V103

V104

V106

V107

V109

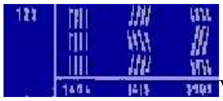
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

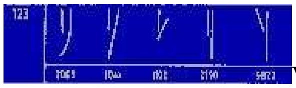
V111

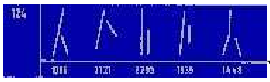
V112

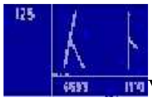
V119

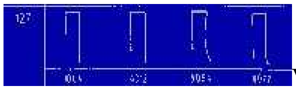
V120

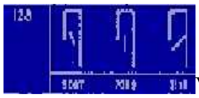

V121

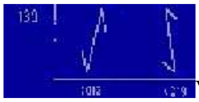

V123

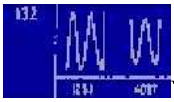

V124


V125

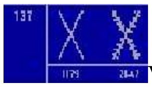

V127


V128

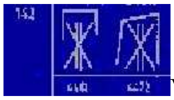

V130

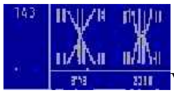

V132

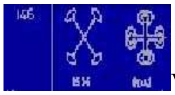
V136

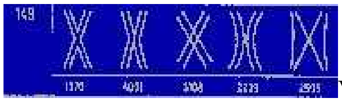

V137

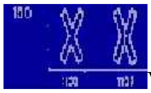
V141

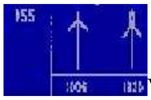

V142

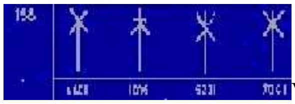

V143

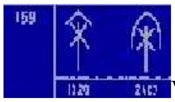

V146

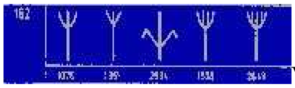

V149

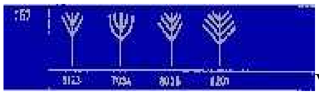

V150

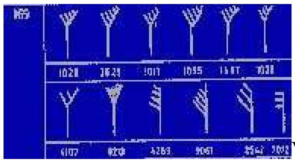

V155

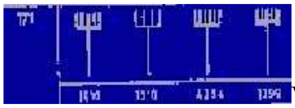

V158

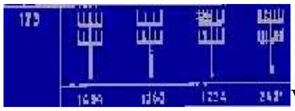

V159

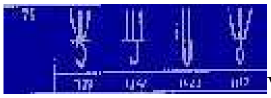

V162

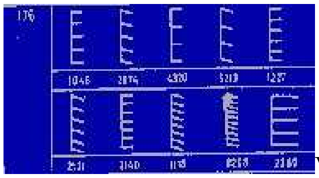

V167

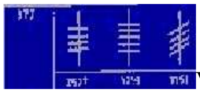

V169


V171

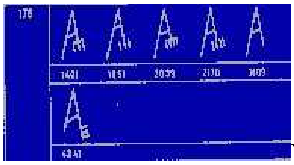

V173

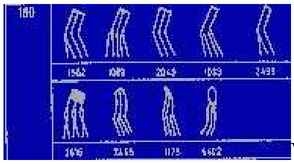

V175


V176

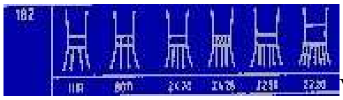

V177

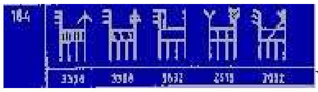
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com


V178

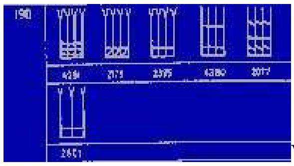

V180

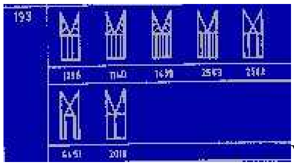
V181

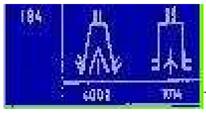

V182

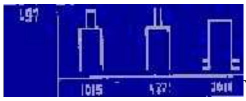

V184

V186

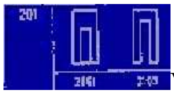

V190

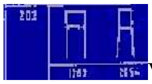

V193

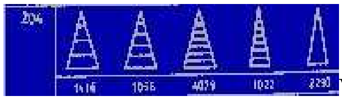

V194

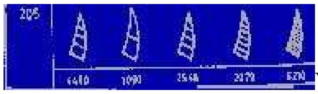

V197

V198


V201

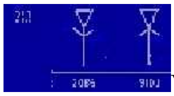

V202


V204

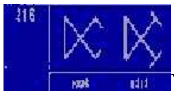

V205

V206

V210

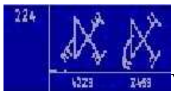

V213

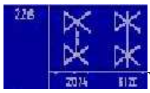
V214

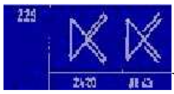

V216

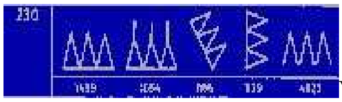
V217

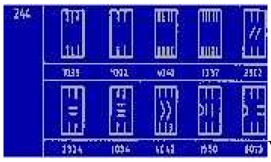
V219

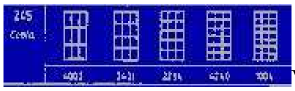

V224

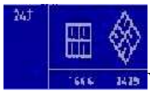

V228


V229

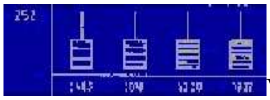

V230

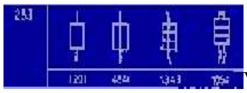

V244

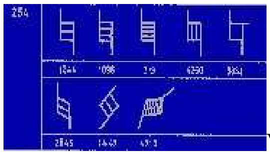

V245

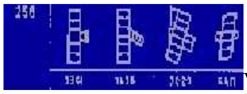

V247

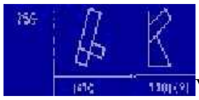
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

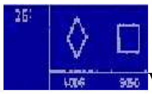

V252

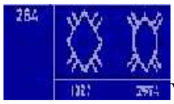

V253


V254


V258


V259


V261


V264

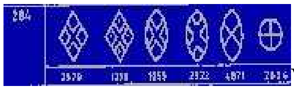
V267

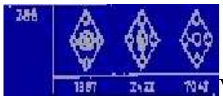
V272

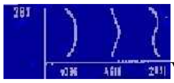
V275

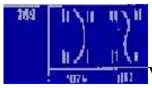
V277

V278


V284

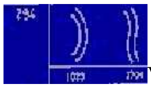

V286

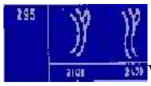

V287

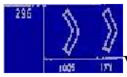

V289

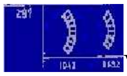
V290

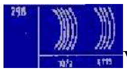
V292

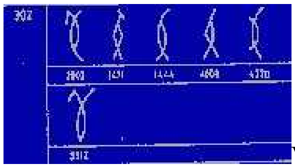

V294

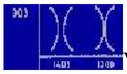

V295


V296


V297


V298


V302


V303

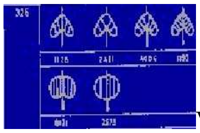
V305

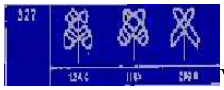
V307

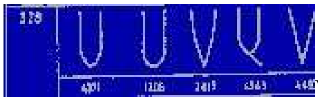
V312

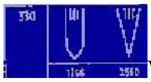
V322

V324

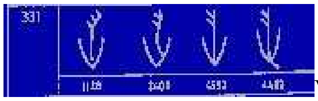

V326


V327

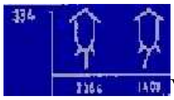

V328

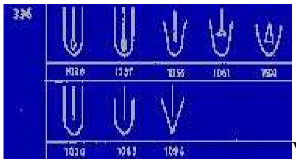

V330

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

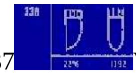

V331

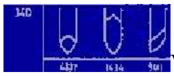
V332

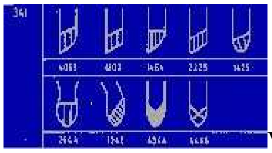

V334

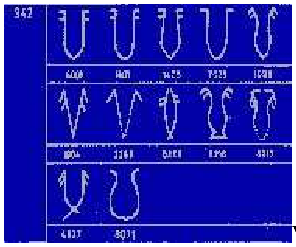

V336

V337

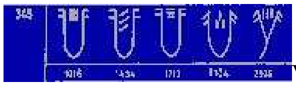

V338

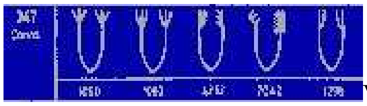

V340

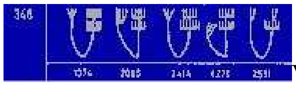

V341

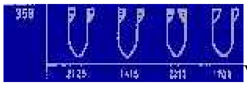

V342

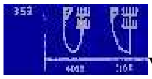
V343

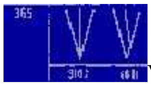

V345


V347

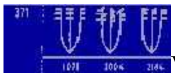

V348

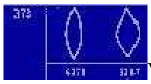

V358

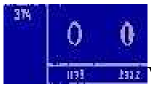

V359


V365

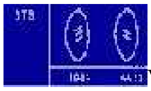
V367

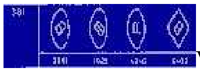

V371

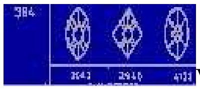

V373

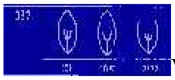

V374

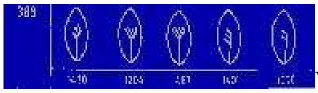
V375


V379


V381


V384

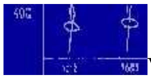

V387

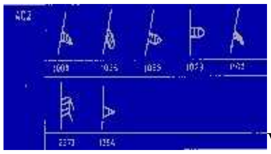

V389

V391

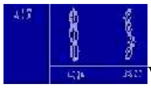
V393

V394

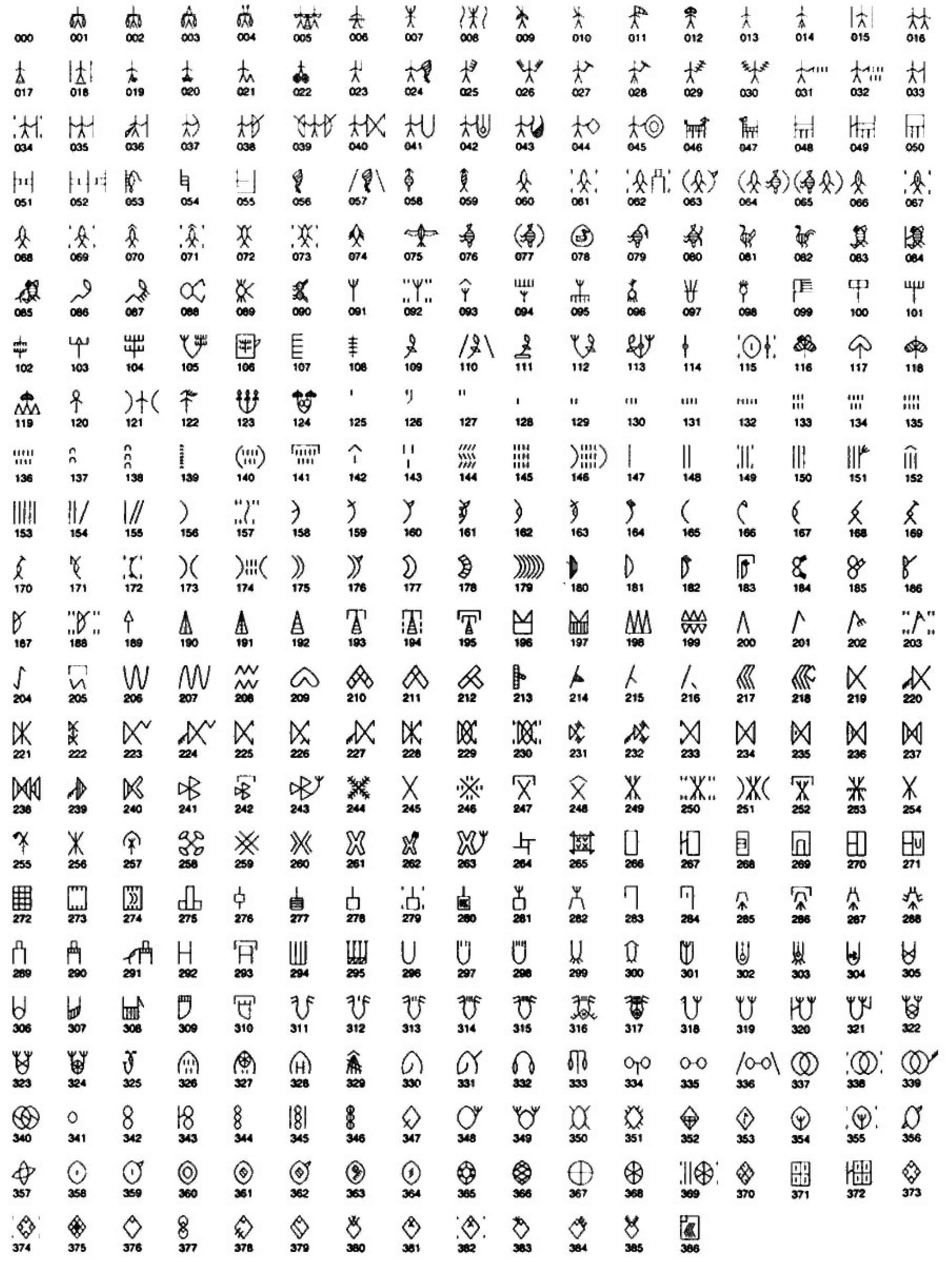

V400


V402

V403

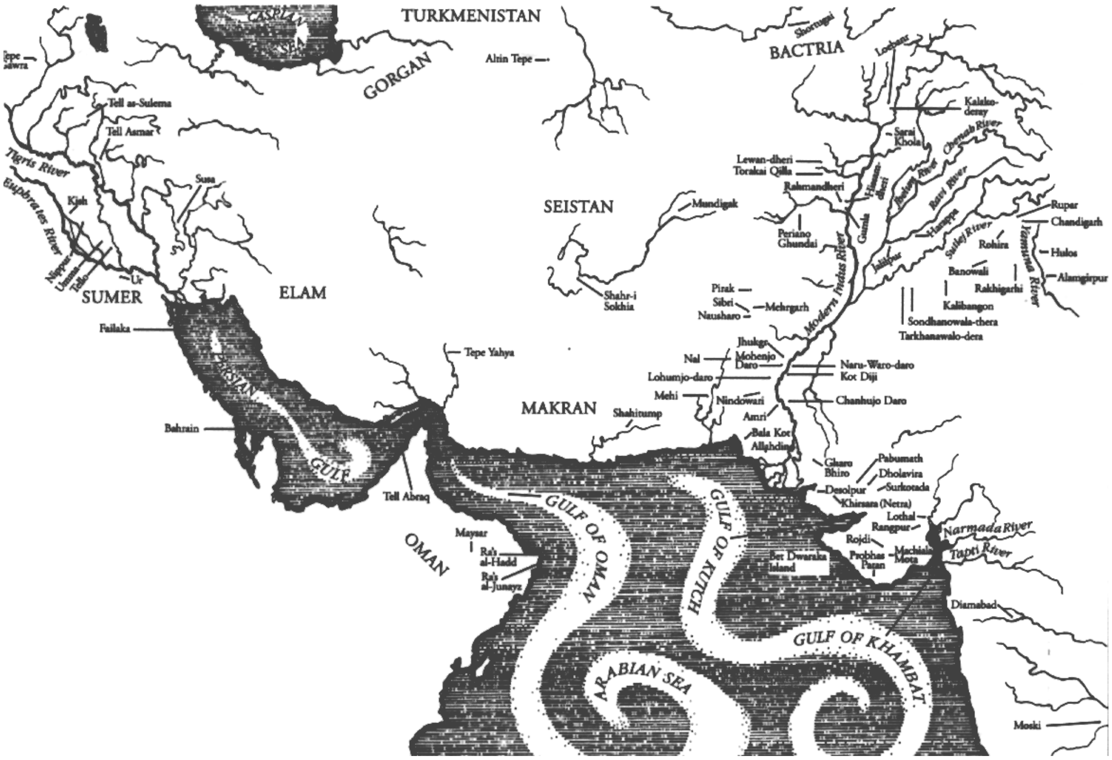

V417

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



Sign list created in 1995 by Tuomo Saarikivi and Bertil Tikkanen

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



Over 45 sites where objects with epigraphs have been discovered – dated circa 3300 BCE to 1500 BCE. The sites extend from Tepe Gawra on Tigris river on the west to Alamgirpur on Yamuna river on the east; from Altin Tepe in the north -- east of Caspian Sea (south of Turkmenistan) to Maski on Krishna river on the south.

The expanse across the Persian Gulf and along the coastline of the Arabian Sea is matched by the riverine sites on the banks of Rivers Sindhu and Sarasvati.

The rivers and the coastline were a veritable waterway enabling an extraordinary reach of the civilization exemplified by about 4,000 objects with epigraphs over this vast region stretching over 5000 kms from east to west and 2000 kms. from north to south and over a time horizon of nearly two millennia.

(Map after Asko Parpola and Jagatpati Joshi, 1988, *Corpus of Indus Seals and Inscriptions, Volume 1*, Helsinki, Academia Scientiarum Fennica and Map 8 in: Jane R. McIntosh, 2002, *A Peaceful Realm – the Rise and Fall of the Indus Civilization*, New York, Westview Press).

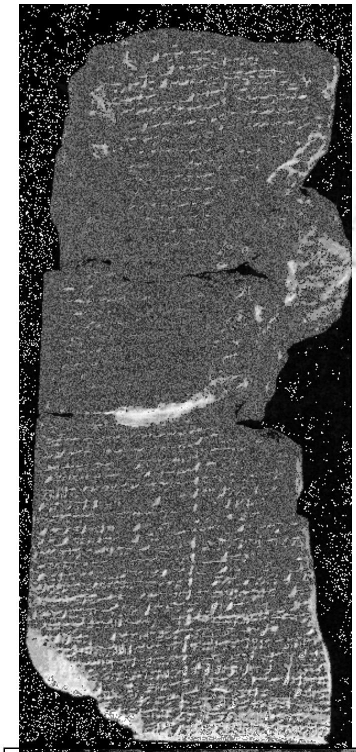
The clustering of the find sites around the Sarasvati Sindhu river basins and the coasts of Gulf of Khambat and Kutch point to Meluhha (mleccha) as the language underlying the epigraphs.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Epigraph Discovery Sites and Epigraphs held in Museums

Alamgirpur
Allahdino
Amri
Balakot
Banawali
Bet Dwaraka
Chandigarh
Chanhudaro
Daimabad
Desalpur
Dholavira
Gharo Bhiro (Nuhato)
Gumla
Harappa
Hissam-dheri
Hulas
Jhukar
Kalibangan
Kalako-deray
Khirsara
Kot-diji
Lewandheri
Loebanr
Lohumjodaro
Lothal
Maski
Mehi
Mehrgarh
Mohenjodaro
Nindowari-damb
Nausharo
Naro-Waro-dharo
Pabumath
Prabhas Patan (Somnath)
Pirak
Rangpur
Rakhigarhi
Rahman-dheri
Rohira
Rojdi
Rupar
Shahi-tump
Sibri-damb
Surkotada
Tarkhanewala-dera
Tarakai Qila
Unknown Provenance
Museum Guimet, France
Harappa 1993-95 excavations
Proto-elamite glyptics
Mohenjodaro: other objects
West Asia
Near East
Ashmolean Museum, Oxford
Tell Suleimah, Iraq
Pierport Morgan Library, New York
Tell Asmar (Eshnunna), Iraq
Gulf states
Early Harappan bowl with ‘fish’ glyph
Nippur
Ur
Saharanpur, Western Uttar Pradesh
Metropolitan Museum of Art, New York
Nausharo and other sites
Inscribed objects from Harappa 2000-2001
Manuscripts in Schoyen Collection
Parallels from Mesopotamia (and Anatolia)
Shaft-hole axhead (Bactria-Margiana)
Anatolia and the Caucasus
Bulla-envelope, Adab, Sumer
Royal Ontario Museum
Burdin Fine Arts Exhibition
Steatite seals in the British Museum

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



Clay tablet with a poem in Sumerian, dated to circa 1500 BCE. God Enki describes Meluhha. Discovered in 1898 by Herman Hilprecht and John Peters – Universityh of Pennsylvania -- at Nippur..(After Louvre/Art Resource)

Button seal (circa 2800 to 2600 BCE). Harappa. (After JM Kenoyer/Courtesy Dept. of Archaeology and Museums, Govt. of Pakistan).

Seal showing a horned tiger. Mohenjodaro. (After Scala/Art Resource).

Signboard on the North Gate leading to the walled citadel. Dholavira. Courtesy ASI.

There is a glyph common to the Dholavira sign board, to the epigraph on the horned-tiger seal and the glyph on the button seal of Harappa. The glyph is a 'lid, cover' for a pot: ^ Lexemes: **ad.aren, d.aren** lid, cover (Santali) Rebus: **aduru** 'native metal' (Ka.). It is possible to unravel many substratum lexemes of **Mleccha** (**Meluhhan**) and at the same time, decode the epigraphs; the key is to unravel the dialectical continuum of the linguistic area circa 5500 years Before Present. Since the cultural traits of the civilization which evolved about 5500 years Before Present are present even today in Bharat, the languages of Bharat constitute the data set for decoding lexemes of such a dialectical continuum. A remarkable cultural trait which continues into the historical periods of Bharat is the use of copper plates to record epigraphs as property transactions. The epigraphs are the artifacts created by artisans of the Sarasvati civilization, the metal workers who recorded the ownership of the furnaces and trade in a civilizational resource: stones, metals and minerals. This hypothesis on language, writing system and function served by the epigraphs, will be tested further in a separate volume of the Saptathi Sarasvati, the septet of 7 volumes on Sarasvati.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Writing System:
Structure, form and function

All words are semantic indicators

An ancient system of writing in vogue in Bharat, is referred to as *mlecchita vikalpa*, one of the 64 arts to be learnt and listed in Va_tsya_yana's Ka_masutra. *Mlecchita Vikalpa* means: 'writing in cipher.' A cipher or code can be created through a system of glyphs, called *rebus*.

All words are semantic indicators. **ella_ccollum porul. kur-ittan-ave_** (*Tol. Col. Peya.* 1)

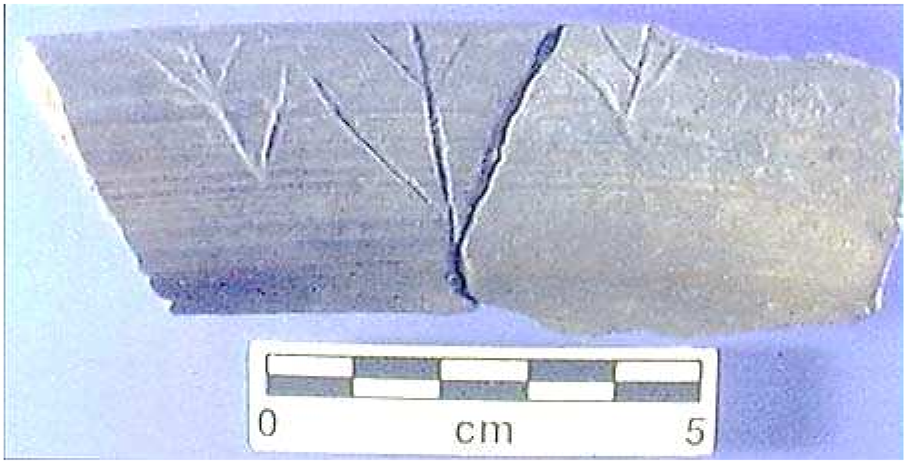
For each morpheme conveyed by a pictorial motif, a similar sounding 'substantive' morpheme (homonym) will be identified. The formula in this rebus methodology is:

Image = Sound = Meaning

Rebus (Latin: 'by means of things') is a graphemic expression of the phonetic shape of a word or syllable. Rebus uses words pronounced alike (homophones) but with different meanings. Sumerian script was phonetized using the rebus principle. So were the Egyptian hieroglyphs based on the rebus principle.

The rebus system of writing, thus, is governed by the organizing principle: **all glyphs are phonetic indicators or phonetic determinants**.

It will be demonstrated, by presenting clusters of epigraphs of Sarasvati Civilization, that the glyphs used to constitute the epigraphs are *mlecchita vikalpa*, a *rebus* writing system, evolved circa 3300 BCE in Harappa, an archaeological site located on the.left bank of River Ravi and rigt-bank of River Sarasvati [trunk tributary: *S'utudri* (RV), *S'atadru* (MBh.), *Sutlej* (historical periods)].



Ravi potsherd with an early writing system (Harappa, 1998 find; after Kenoyer Slide 124). Locus

The epigraphs of Sarasvati (Bharatiya) Civilization contained in over 3000 objects present a remarkably uniform writing system over an expansive area and from over 45 sites ranging from Rakhigarhi on the east to Shahitump on the west, from Ropar on the north to Daimabad in the south.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Epigraphs have also been found in neighbouring civilization sites such as: Ur, Tepe Yahya, in areas now called Iran, Iraq and Persian Gulf States.

Earliest writing system of the world? Comparative evaluation of early writing systems

It is likely that we are dealing with one of the earliest inventions of writing in the world; the earliest epigraph of the civilization has recently been discovered (year 2000) at Harappa on a potsherd. This stratigraphically dated (circa 3300 BCE) discovery is close to the date of the early writing system using cuneiform on clay tablets in Mesopotamia or Proto-Elamite tablets (dated circa 4th millennium BCE).

An evaluation of the writing system can be presented in terms of structure, form and function of the writing system.

This can also be evaluated in the perspective of similar writing systems which evolved in neighbouring civilizations such as Mesopotamia and Egypt.

The Egyptian writing system composed of hieroglyphs was decoded because a Rosetta Stone was available with the same epigraph written with hieroglyptic writing system was also transcribed in the known scripts of Greek and Coptic.

Rosetta Stones

Even though a 'Rosetta Stone' has not been discovered so far to enable a conclusive presentation of the code used by the writing system, there are inscriptions available in neighbouring civilization areas containing glyphs comparable to Sarasvati (Bharatiya) Hieroglyphs. A comparative evaluation of the glyptic art forms found on cylinder seals and tablets of Mesopotamia and Elam, for example, will also be attempted to draw parallels in structure, form and function of the writing system which emerged in the fourth millennium BCE in what is referred to as the Near East (Mesopotamia – Tigris-Euphrates River Basin, Dilmun-Magan-Persian Gulf; Elam – Oxus River Basin) and Meluhha (Sarasvati-Sindhu River Basin).

The more numerous rosetta stones are the 8000 semantic clusters of lexemes from Bharatiya languages which enable homonyms to be identified to be tagged to the hieroglyphs created by braziers.

Structure

The structure of the writing system is divided into two distinctive elements which together make up the epigraphs: pictorial motifs (or over 100 field symbols) and signs (over 400). The pictorial motifs are glyphs such as:

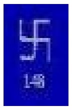
wild animals (e.g. tiger, elephant, boar, monkey), domesticated animals (e.g. bull, buffalo, deer) and other living phenomena (e.g. snake, eagle, scorpion, lizard, fish, branches of tree, stalks of plants);
glyphs presented in unique geometrical forms: svastika, dotted-circle, trefoil, *vedi* (fire-altar); and
representations of inanimate objects of house-hold use (e.g. rim of pot, rimless pot, double-axe)

A characteristic structural feature of the writing system is that the glyphs are recorded on a variety of objects: seals, tablets, copper plates, bangles and there are epigraphs recorded even on metal weapons.

Blurred distinctions between 'pictorials' and 'signs'

The distinction between pictorial motifs and signs gets blurred in many compositions presented in the script inscriptions.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



Thus, a svastika appears together with an elephant or a tiger.The 'svastika' is a pictorial and also a sign

Sign 148 Glyph: **sathiya_** (Pkt.); rebus: **satva** 'zinc' (Ka.) Elephant: **ib**; rebus: **ib** 'iron'; Tiger: **kol**; rebus: **kol** '*pan~caloha* alloy of metals'.

m1186AComposition: horned person with a pigtail standing between the branches of a pipal tree; a low pedestal with offerings (? or human head?); a horned person kneeling in adoration; a ram with short tail and curling horns; a row of seven robed figures, with twigs on their pigtails.

samr.obica, stones containing gold (Mundari.lex.) cf. *soma* (R.gveda) **samanom** = an obsolete name for gold (Santali).

saman: = to offer an offering, to place in front of; front, to front or face (Santali) [Note the glyph of short-horned bulls facing each other.]

bali = iron stone sand (Santali) **bal** = to bore a hole, or to puncture, with a red ho iron (Santali) [Note: the dotted circle may denote rebus: **bali** 'iron stone sand'.]

era = a bait; food; a victim for sacrifice (Te.lex.) [Note. A bait (?) placed on a low stool as an offering on a glyptic representation of offering].[1]

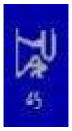
er-agu = a bow, an obeisance; er-aguha = bowing, coming down (Ka.lex.) er-agisu = to bow, to be bent; to make obeisance to; to crouch; to come down; to alight (Ka.lex.) cf. arghas = respectful reception of a guest (by the offering of rice, du_rva grass, flowers or often only of water)(S'Br.14)(Skt.lex.) erugu = to bow, to salute or make obeisance (Te.)

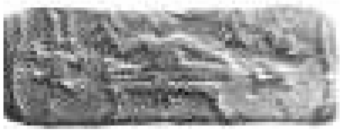
erka = ekke (Tbh. of arka) aka (Tbh. of arka) copper (metal); crystal (Ka.lex.) cf. eruvai = copper (Ta.lex.) eraka, er-aka = any metal infusion (Ka.Tu.) **eruvai** 'copper' (Ta.); **ere** dark red (Ka.)(DEDR 446).

Many-sided tablets with epigraphs

Inscriptions are recorded on many 'tablets' with upto six sides. Harappan 'miniature tablets' are incised flat plates of steatite. Mohenjodaro has yielded engraved copper tablets. Moulded terracotta or faience tablets occur with many repeated texts produced in bas-relief. "On one particular moulded tablet (existing in several identical copies), we see an anthropomorphic deity sitting on a low dais, flanked on either side by a kneeling man and a snake; one of these supplicant men has both his hands raised in worship, while the other is giving what looks like a sacrificial vessel to the deity. Another moulded tablet (again available in several copies) has a similar offering scene, except that here the kneeling worshipper holds out the pot towards a tree. On both tablets the sacrificial vessel looks exactly like the U-formed Indus sign." (Parpola, 1996).

The vessel shown on the tablet is a rimmed, narrow-necked pot; the vessel shown on Sign 45 is a rimless, wide-mouthed pot.



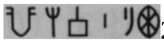


Triangular terracotta amulet, one side (Md 013), surface find Mohenjodaro; seated horned person on a throne with hoofed legs, surrounded by fishes, gavials and snakes; Ashmolean Museum, Oxford; Parpola, 1994,. p. 186.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Glyph ligatures

http://kalyanaraman.net/signs/Cylind~5.jpgThere are many pictorial ligatures exemplied by such compositions of animals, further exemplified by the composition referred to as the 'fabulous animal'.

m0300 2521

m0300 (Body of a ram, horns of a bull, trunk of an elephant, hindlegs of a tiger and an upraised serpent-like tail). Ligatures are basic signs and/or pictorials in inscriptions super-imposed on one another to compose a composite representation of components.

Ligaturing is a procedure for attaching two signs or field symbols or parts of field symbols (e.g. combining heads of unicorn, short-horned bull, antelope, or leaf images) into one composite motif.

Concept of ligaturing and parallels in Mesopotamian civilization: provide clues to an understanding of logography used in inscribed objects of Sarasvati Sindhu Civilization

Form

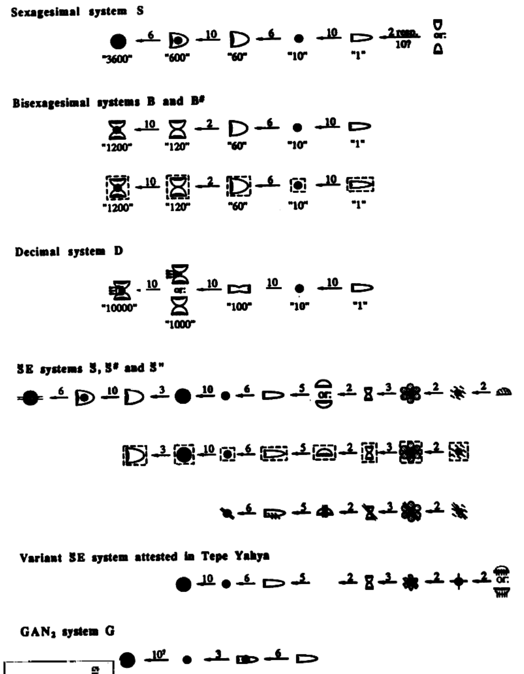
The form of the writing system is governed by a remarkably economical use of glyphs (both pictorial motifs and signs); an average of 5 signs are used in a message with or without pictorial motifs. This economy of use is ompensated by a system of ligaturing glyphs (both pictorial motifs and signs, exemplified by ligatures of multiple animal motifs and ligatures of, say, rimless pot with a five-petalled plant such as *taberna montana*).

Thus the form is essentially glyptic, not unlike the Egyptian hieroglyphs, with the variation that unlike Egyptian hieroglyphs which are presented in ‘sequence’, many glyphs of the civilization occur in ligatured forms.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

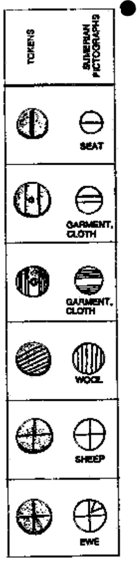
Function

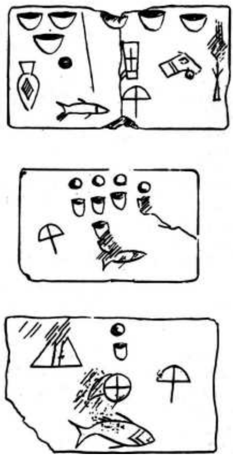
One of the functions performed by the writing system is to record information about traded commodities. This is surmised from the presence of sealings (i.e. clay tablets with impressions of seals) with impressions of straw-mats used to pack the traded commodities. A remarkable epigraph with ten signs occurs on a monolithic board which should have been mounted atop the gate of Dholavira stone fortification.A function performed by the writing system used on weapons is to record ownership.

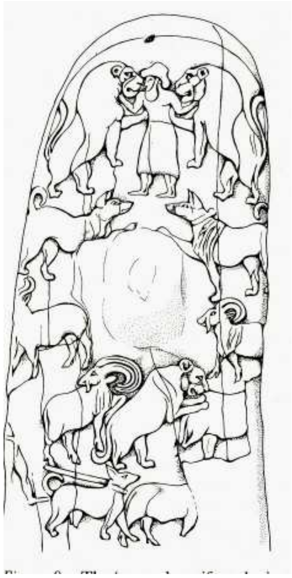


The function of the writing system can thus be related to the early concepts of private property – to record personal possessions of tools, tools-of-trade or even, products produced or professions of the person who possesses the object recording the epigraph. Copper plate has been used in Bharatiya civilization, even during historical times, to record property transactions and as a record of possession of the recorded property.

The rebus system of writing, thus, is governed by the organizing principle: **all glyphs are phonetic indicators or phonetic determinants**.







Evolution of writing

Early writing systems were related to counting of objects.

One of the signs in this group of Uruk tablets is a circle with four segments, perhaps representing four felloes of a wheel. Tablets. Uruk, Sumer. Numbers and fish signs. [After JV Kinnier Wilson, 1987, Fish rations and the Indus script: some new arguments in the case for accountancy, *South Asian Studies* 3: 41-6: 43, fig. 2 based on photographs in Adam Falkenstein, 1936, *Archaische Texte aus Uruk, bearbeitet und herausgegeben*, Ausgrabungen der Deutschen Forschungsgemeinschaft in Uruk/Warka,2, Berlin: texts 256, 68 and 336.] It is likely that the fish signs connoted some countable objects. Note that on tablet a there is a device which may be comparable to the standard device on many SSVC inscribed objects in front of the one-horned bull.

Numerical sign systems used on Susa III-type tablets. Sexagesimal System (S); Bisexagesimal system (B and Bs); Decimal System (D); S'E systems (S', S'# and S'"); Variant S'E system attested in Tepe Yahya; Gan2 system (G). "With the exception of the decimal and bisexagesimal B# systems, the rest of the numerical systems in use at Susa during the Susa III period were either identical oto or else derived from the systems

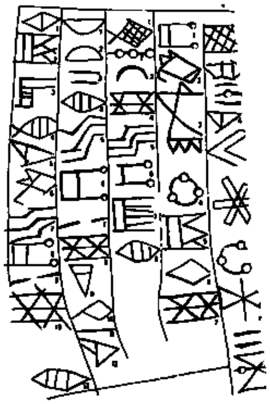
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

found in the proto-cuneiform texts from Uruk." (After P. Damerow and Englund, R.K., 1989, *The Proto-Elamite Texts from Tepe Yahya*, Cambridge: American School of ; D.T. Potts, 1999, *The Archaeology of Elam*, Cambridge University Press, p. 75). The dots are reminiscent of the raised dots which occur on the copper hoard objects in Bha_rata. Depending on the size used in Susa texts, the dots connote 3, 6, 10, 3600. While there could be no genetic link between the Susa III texts (c. 3000 BCE), the earliest Old Elamite inscriptions (c. 2300 BCE) and the Copper Hoards of Bha_rata (c. 2000 BCE), since pictographs could be similar in disparate cultures, the appearance of 'dots' on copper objects may reasonably be seen as some system of numeration related to the moulds used and perhaps the number of copper objects produced in one pouring of molten metal into the moulds. There is also a possibility that a phoneme may be indicated by the 'dot' which represented, say, the type of proportional mixing used in hardening an alloyed metallic object. [t.ud.ak = a dot; t.un.d.i = the point where the shafts of a bullock cart unite, and where the yoke is attached (Santali.lex.) If a dot represented a t.ud.ak and t.ud.u is a Santal sept, it is possible that the number of dots connoted the numerical order of the Sept to which the copper hoard product belonged].

Using signs to denote or to count objects

Clay tokens compared with archaic Sumerian pictograms from Uruk. [After Denise Schmandt-Besserat, 1978, The earliest precursor of writing, *Scientific American*, 238 (6): 50-59: 56].

The Elamite inscriptions indicate the use of writing system to transfer bronze or wood articles.

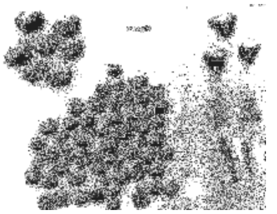


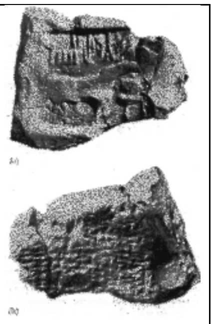
Ivory handle of a flint-bladed knife. Gebel el-'Araq, Upper Egypt. Motif is Sumerian style of the Jemdet Nasr period.[After James Pritchard, 1969, *The ancient near East in pictures, relating to the Old Testament*, Princeton, 90, no. 290]. The carved flint knife from Gebel el-'Araq shows on its handle a man in Sumerian dress subduing two lions, three jackals (tigers), two rams; two bulls (partially seen from hoofs); related to a period predating the First Dynasty of Egypt which started c. 3000 BCE. Rebus: **ara** = lion; copper; **kol** = jackal, tiger; metal; **mr..eka** = ram; **meluhha**, 'copper'.

A bilingual inscription of Puzur-Ins'us'inak, the last Elamite king of Awan dynasty (c. 2260-2225 BCE). Akkadian segment reads: 'To the god Ins'us'inak, his lord, Puzur-Ins'us'inak, Governor of Susa, Regent of the land of Elam, son of S'imbis'huk, dedicated a **bolt of bronze (and) cedar-wood'**. Two identical sequences of four signs in the first two columns in Linear Elamite (I 7-10 and II 5-8) were read s'u-s'i-na-ak by F. Bork in 1905, immediately after the text was published by V. Scheil in 1905. [After Francois Vallat, 1986, *Les Documents epigraphiques de l'acropole (1969-1971)*, Cahiers de la delegation archeologique Francaise en Iran, I, Paris: 341, fig. 3] While Linear Elamite with 103 known signs is likely to be syllabic, proto-Elamite writing had hundreds of signs used in c. 3100-2900 BCE, comparable to archaic Sumerian with wedge-like counting devices and pictograms.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

The point to note is the correlation between weapon objects and use of a writing system.



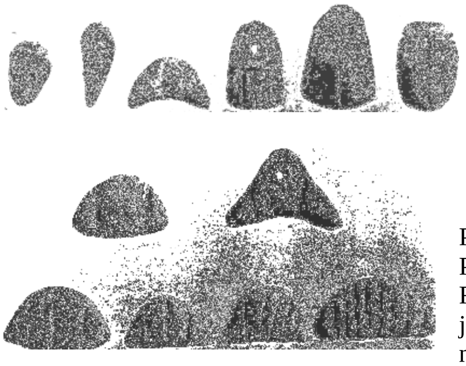


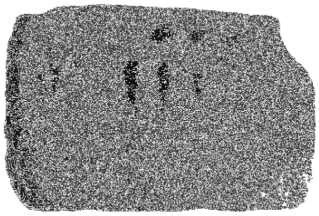
Evidence for use in enumeration of goods

This is a sample of the use of seals with pictographs typical of the Indian civilization found in Mesopotamia; an apparent indication of the use of seals as bills of lading:

Clay tag from Umma, Iraq. (a) Obverse: impression of a stamp seal with typical Sarasvati civilization glyphs; (b) reverse: cloth impression indicating that the tag was part of a packaging. Department of Ancient Near East (accession no. 1931.120), Ashmolean Museum, Oxford. [After Parpola, 1994, fig. 7.16].

Plain tokens (Starting about 8000-7500 BCE to 3200 BCE, the tokens were plain); large and small spheres, tetrahedrons, cones, and cylinders from Uruk, Iraq. German Archaeological Institute, Berlin.

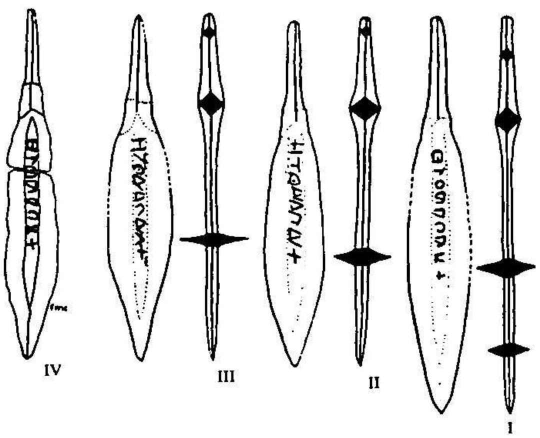




Complex tokens, 3300 BCE (left to right) bent coils, triangle, paraboloids, and rectangle, from Susa, Iran. Louvre Museum, Paris.

Triangle tokens (3300 BCE) with 2,3,4,5 and 8 lines, from Susa, Iran. Louvre Museum, Paris.

Pictographic tablet (circa 3100 BCE) from Godin Tepe, Iran. Royal Ontario Museum, Toronto. “33 jars of oil”: V represented a jar of oil; three circles represented 3 tens; and three wedges the numeral 3 making a total of 33. Counting and writing are two closely interrelated processes of numeracy and literacy.



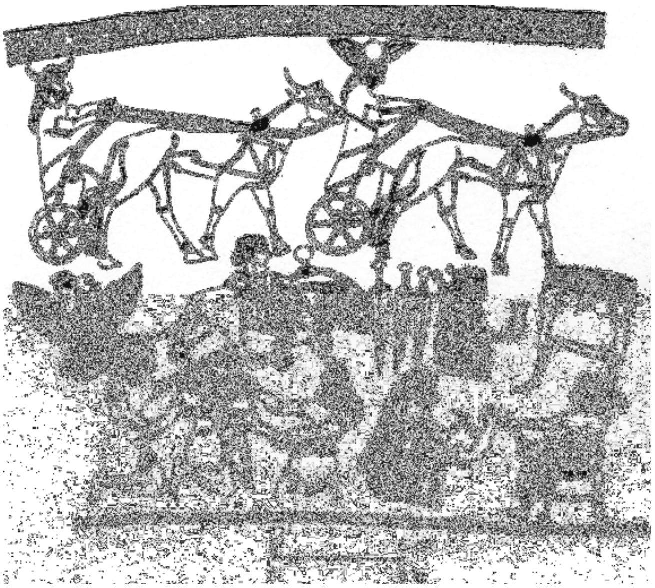
Tokens have been found in 43 and 40 sites in Iraq and Iran respectively. “Each token shape, with its own markings, had a specific meaning…For example, the cone and sphere seemingly represented two separate measures of grain equivalent to our modern liter (quart) and bushel (36 liters), respectively; the ovoid stood for a jar of oil; and a disk with an incised cross meant a sheep. Other tokens, such as the lenticular disk, may have referred to a collection of animals, such as a flock (perhaps ten animals)…The difficulting in storing the counters inspired the creation of clay envelopes so that they could be kept in discrete groups…From tokens to impressed tablets. The system of markings on envelopes ushered in a new phase of the token system. It became obvious to the accountants dealing with the envelopes that it was unnecessary to repeat the information, first with tokens inside the envelope and second with markings outside. Thus, solid clay tablets bearing impressed signs replaced the hollow envelopes, holding tokens…From tokens to pictographic writing. The impressed signs satisfactorily translated the shapes of the former plain tokens. The complex tokens with multiple markings, however, did not lend themselves to being impressed and gave rise to incised signs traced with a stylus (figure)…The token system paved the way

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

not only for pictographic writing but also for the invention of the abstract numerals that are fundamental to mathematics." The addresses on fragments of clay at Tello prove that sealings were employed on bundles despatched from city to city (L.W. King: *A history of Sumer and Akkad*, 1910, pp. 236-7). Cylinder seals are a typical Sumerian invention. The use coincides with the use of clay tablets, starting at the end of the 4th millennium up to the end of the first millennium. Thereafter stamp seals are used again. Many cylinder seals were used in trading moveable property items of the Mesopotamian civilization. Such seals were also used in the Sarasvati-Sindhu civilization. Clay tablets were used for accounting, literary, administrative documents; the invention was expanded to economic needs (the first tablets are predominantly economic in nature). The seals served as signature, confirmation of receipt, or to mark clay tablets and building blocks.

Documenting ownership of possessions

What started as a writing system to count objects was later extended either to define the objects themselves or to identify the owners of objects.



Drawing of the design on the gold bowl from Hasanlu, circa tenth to ninth centuries BCE. The three individuals wearing patterned tunics (two men and one woman) wear garment pins at shoulder. The depiction of two chariots, three daggers and furniture are indicative of the property items significant enough to be incised on a gold bowl. A photograph of the bowl appears in 'Art and Archaeology of Western Iran in Prehistory' in Part 5, Vol. II. The bowl is in the Musee Iran Bastan, Tehran. Drawing by Maude de Schauensee; The University Museum of Archaeology and Anthropology, University of Pennsylvania, Philadelphia. [Fig. 20 in: Jack M. Sasson (ed.), *Civilizations of the Ancient Near East*, p.2504].

[Denise Schmandt-Besserat, Record keeping before writing, in: Jack M. Sasson (ed.), *Civilizations of the Ancient Near East*, pp. 2097-2179].

Incised arrowheads. El-Khadr arrowheads I-IV. Reading down, I and III are inscribed hs. 'bdlb't (arrow of Abdlabi'at). The same inscription is found on II and IV, but II omits the aleph and IV omits the second beth; both omissions are probably accidental. Benjamin Sass, 1988, *The genesis of the alphabet and its development in the second millennium BCE.*

The point to note is that the arrow-heads were important property items which required the owner's to identify them with inscriptions.

Each sign is not an alphabet or syllable, but a word

There are over 170 inscriptions with only one sign (in addition to the field symbol); about 30 inscriptions have only two signs (Sepo Koskenniemi et al., 1973, p. x).

These statistics establish the following facts:

A combination of pictorials without the use of any sign constitute a message.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

One or two signs and/or a pair of signs are adequate to compose the core of a message.

This leads to the apparent conclusion that the solus sign or each sign in a pairwise combinations (which constitute the core of information conveyed) is not an alphabet or a syllable, but a **word**.

This apparent evidence is echoed in Koskenniemi et al: "... the Indus script is in all likelihood a relatively crude morphemographic writing system. The graphemes would usually stand for he lexical morphemes... This hypothesis is based on the approximate date this writing system was created (circa 26th century BCE), the parallel presented by the Sumerian writing system of that time (the Fara texts of the 26th century), the brevity of recurring combinations, and the number of different graphemes." (Koskenniemi and Parpola, 1982, pp. 10-11). Another echo is found in the structural analysis of Mahadevan: " G.R. Hunter (1934, p. 126) formulated a set of criteria for segmentation of the texts and found that almost every sign of common occurrence functioned as a single word. The Soviet group (M.A. Probst and A.M. Kondratov in Y.V. Knorozov et al., Proto-Indica, Moscow, 1965) analyzed texts on the computer and concluded that the Indus script is essentially morphemic in character, resembling the Egyptian hieroglyphic system in this respect. I have described the logical word-division procedures developed by me (I. Mahadevan, "Recent advances in the study of the Indus script", *Puratattva*, Vol. 9, p. 34), which show that most of the signs of the Indus script are word-signs... no one has so far been able to establish by objective analytical procedures the existence of purely phonetic syllabic signs in the Indus script... Phonograms formed by the rebus principle can be recognized only if the underlying language is known or assumed as a working hypothesis. Since the identity of the Harappan language has not yet been established beyond doubt, it cannot be said that any phonogram has been recognized with certainty... It is however very likely that there are rebus-based phonograms in the Indus script, as otherwise, it is very difficult to account for the presence of such unlikely objects such as the fish, birds, animals and insects in what are most probably names and titles on the seal-texts. It is likely that the Indus script resembles in this respect the Egyptian script in which pictographic signs serve as phonetic signs based on the rebus principle (e.g. the picture of a ‘goose’ stands for ‘son’ as the two words are homonymous in the Egyptian language). It is not always possible in the present state of our knowledge to distinguish between ideograms and phonograms..." (I. Mahadevan, "Towards a grammar of the Indus texts: ‘intelligible to the eye, if not to the ears’, *Tamil Civilization*, Vol. 4, Nos. 3 and 4, Tanjore, 1966, pp. 18-19).

According to the Parpola concordance which contains a corpus of 2942 inscriptions, 300 inscriptions are composed of either one sign or two signs. Many signs occur in predictable pairs; 57 pairwise combinations account for a total frequency of 3154 occurrences (32% of 9798 occurrences of all pairwise combinations). Given the statistical evidence that the average length of a text is 5 signs, it is apparent that one sign or a pair of signs represents a ‘substantive category’ of information, i.e., a complete message.

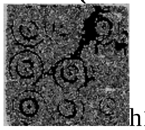
In addition to the field symbol, the texts of the inscriptions are composed of an average of five signs. The longest inscription has 26 signs (found on two identical three-sided tablets: M-494 and M-495 of Parpola corpus).

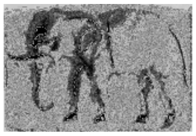
Pictorial motifs (glyphs) are also messages, words

There are over 25 inscriptions which have only pictorial motifs, 40 inscriptions have only one sign (in addition to the field symbol); about 110 inscriptions have only two signs; and nearly 150 inscriptions have only 3 signs. (See also: Sepo Koskenniemi et al., 1973, p. x). There are over 50 inscribed objects with just the svastika_ pictorial motif.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

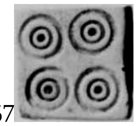
Inscribed objects with only pictorial motifs (no texts)


h128


jhukar1

Maski

Kaliba


ngan057
Kalibangan058

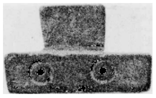
m1256

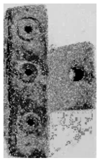
m1257

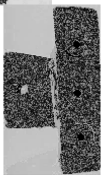
m1259

m1260

m0352A


m0352C

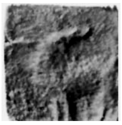

m0352D


m0352E
m0352F

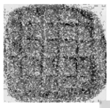
m1654A ivory cube

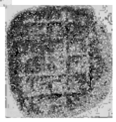
m1654B ivory cube

m1654D ivory cube


m0438atcopper

m448t




m0496At
m0496Bt

Prabhas Patan (Somnath) 1A

Prabhas Patan (Somnath)1B

Sibri-damb01A

Sibri-damb01B

Amri06
m1171 Composite animal with the body of an ox, and three heads: of one-horned bull (looking forward), of antelope (looking backward) and of a short-horned bull (bison) (looking downward.

m0270 [Incomplete seal?]

m0271 Goat-antelope with horns turned backwards and a short tail

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Speculations on the functions of the script

Recording property items

Any number of reasonable speculations may be made given the object types such as tablets which may have had many duplicates and objects such as seals and bangles which could have been carried on the person possessing the object perhaps worn on the wrist. If the script was intended to serve a personal marker in a disciplined cultural group there is a possibility that the script was used not to record personal names but to record personal items of property or OTHER items of value entrusted to the person by the collective cultural group. The script could thus be hypothesized to have served the purpose of recording the name of a commodity or product and the quantities or VALUE of such products.

Early script distinguished from potters' marks

"The invention of a writing system is very different from the use of abstract symbols in rituals or for identification. Neolithic and chalcolithic artisans painted and incised symbols on pottery and other material goods. Some symbols are simplified pictures of plants, animals or sacred mountains; otheres are abstract geometric shapes, lines, circles and triangles…On the basis of recent excavations of the Period 2 occupation levels at Harappa (2800-2600 BCE), along with discoveries at other such early sites as Nausharo, it appears that there may have been one or more Early Indus scripts.

"At Harappa, we find increasing evidence for the use of multiple abstract symbols that were inscribed on pottery prior to or after firing. Some of these symbols are identical to characters used in the later Indus script and even occur in the same sequence, suggesting that they represented the same sounds or meanings. The Early Indus script was probably distinct from the more widespread use of poters' marks, because such marks continued to be used even after the invention of the script. This pattern of use suggests that their function was different and to some extent, independent of writing itself…The invention, acceptance and eventual adoption of the Indus script by all of the regional settlements should be seen as a process stimulated primarily by local needs and fulfilled using a culturally meaningful set of signs.

"Many inscriptions consist of only one sign: in these cases, the grapheme must represent a word or an idea. The most common sign 'horned U' is often used alone, but it also can be combined into other sign sequences. This sign may be a pictograph of a bull with horns, or a handled container, but it undoubtedly represents a very important word or idea…Although it is generally agreed that the Indus script is not an alphabetic form of writing, it does not have enough different signs to be a logographic script…The Indus script was carved, incised, chiseled, inlaid, painted, molded, and embossed on terracotta and glazed ceramic, shell, bone and ivory, sandstone, steatite and gypsum, copper and bronze, silver and gold…

"The wide variety of materials and techniques involving the Indus script is unparalleled in the mid-third millennium BCE….**It is interesting to note that no seal has ever been found with a human burial in the Indus Valley, whereas in Egypt and Mesopotamia the person's seal was usually included with the burial offerings**…Incised and molded tablets…**In one area two groups of identical incised steatite tablets (nine with one set of inscriptions and four with another set) were found along with seals, weights and pendants**. (Madho Sarup Vats, *Excavations at Harappa*, Delhi, Govt. of India Press, 1940, 58-59). In area G, south of the recently discovered gateway on Mound ET, Vats found a concentration of **thirty-one identical cylindrical terracotta tablets** of unknown

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

use…The Indus tablets may have been used as tokens, made up in advance and distributed when goods were brought into the city as tribute or for sale." [JM Kenoyer, 1998, pp. 69-74].

In Mesopotamia, cuneiform writing was used for two different languages: Akkadian and Sumerian. The rebus principle was used in Mesopotamian writing systems, i.e. to represent concrete objects using symbols which sound phonetically similar to the concrete object intended to be represented. It is likely that the symbols used on inscribed objects of SSVC were based on such a rebus principle.

In addition to the languages of North India, South India and of Munda family of languages, there is an unknown, language X which is not associated with any of the known language families. (Walter A. Fairservis, Jr. and Franklin C. Southworth, Linguistic Archaeology and the Indus Valley Culture, in: *Old problems and new perspectives in the archaeology of South Asia,* ed., J. Mark Kenoyer, Madison, Wis., UW-Madison Department of Anthropology, 1989, 133-41). "In addition to the presence of different language families, there were undoubtedly many different dialects spoken throughout the Indus Valley. During the Early Historic period in South Asia many people spoke more than one dialect. For example, Sanskrit was spoken in the ritual and administrative contexts whereas regional Prakrit dialects were spoken at home. (AK Ramanujan, Toward an Anthology of City Images, in: *Urban India: Society, Space and Image*, ed., Richard G. Fox, Durham, Duke University, 1971, 224-44). Although it is possible that the Indus script represents the formal language spoken by elites, some names and words could reflect local dialects that varied from region to region. Consequently, if the writing on the seals does represent more than one language or dialect, we cannot decipher it until a bilingual text or a dictionary has been discovered." (JM Kenoyer, 1998, p. 78).

The association of the find spots in Harappa of inscribed objects with other objects such as seals, weights and pendants is to be noted as a pointer to the possible functions performed by the writing system. On the golden pendant described below, "all inscriptions appear to have been made by the same sharp, pointed tool by the same hand. These inscriptions are extremely important because they are clearly different from the types of inscriptions found on the large copper celts and chisels which also have been found in large hoards. On copper or bronze tools, the writing appears formal, carefully chiseled in a vertical line down the center of the ax or chisel. Other examples are oriented along the butt end of the celts, but in most instances the script would have been partially or totally obscured by hafting. One hoard found at Harappa contained fifty-six copper/bronze tools and weapons. Two of these objects, a dagger and an ax, both were inscribed with a sign that Parpola interprets as meaning 'leader' or 'king'. Such inscriptions are uncommon and may represent the name of the owner or the deity to whom the valuable objects were dedicated. Beyond the commercial and personal uses of writing, the Indus script appears to have had protective or magical powers. Single and multiple signs were carved or painted on objects that were a part of daily life: shell and terracotta bangles, beads, pottery and tools. The repetition of specific signs at many different sites suggests that some signs were probably not personal names, but may have had some ritual significance. Painted on the inside of a plate or the interior of a terracotta bangle, thes signs may have blessed the food of protected the wearer…Short inscriptions associated with these (narrative) scenes (of probably rituals) may represent the names of deities, constellations or supernatural events. The script is also found carved on ivory and bone rods, possibly used in divining the future or perhaps part of a ritual game." (JM Kenoyer, 1998, p. 76).

Objects with inscriptions have been found in many sites and throughout the localities of larger sites such as Mohenjo-daro and Harappa – in the streets and in houses. "Many earlier excavators did not record the contexts in which seals were found, so we cannot assess whether they were in foundation fill (secondary deposits) or actual floor and street levels (primary deposits). Recent excavations at Harappa have defined these different contexts, and we can beging sorting out the complex problem of identifying where seals and inscribed objects were used in the city: the major streets leading into and out of city gateway, the craft workshop areas and near the houses in the high walled areas. Some houses have lots of seals and inscribed objects, and others have very few or none at all. In one pottery manufacturing area at the northwest edge of Mound E there are no seals or tablets, while **in the bead and shellworking area of Mound ET there are a number of inscribed objects.** After reviewing the different ways in which the script was used, we see several patterns emerge. First, only certain people

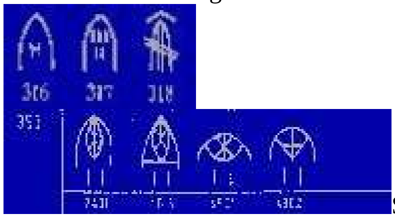
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

owned seals and few people were literate. Nevertheless, the script was generally used in a manner that was openly visible to the general public. For example seals were probably worn and used in public, and graffiti was openly visible on trade vessels. Writing was used in everyday contexts as well as for religious purposes, but the presence of script on gold jewelry, copper tools and stoneware bangles suggests that only the very rich and powerful wrote their names or attributions on personal objects. Objects with writing were scattered in all parts of the city, and almost every settlement of the Indus Valley has produced one or more seals or inscribed objects. A large signboard from Dholavira shows large writing, but most inscriptions are small or miniature. **Perhaps the most important recent discovery is that the style of writing and carving of seals changed over time**; small tablets without animal motifs but with script, come from the middle to late part of the Harappan phase.These patterns indicate that writing was not static but a dynamic invention that had permeated every aspect of urban life. Landowners, merchants, religious leaders, administrators and professional artisans were probably the only people who owned or used inscribed seals, but many of them may not have been able to read or write. Nevertheless, everyone in the society understood the power and authority reflected in writing, and its use throughout the Indus and Sarasvati regions reveals a period of cultural and economic integration. The writing would have reinforced this integration and validated the power of the ruling classes. In combination with religious symbols and narratives the writing would have legitimized the power of the people who used it by associating them with supernatural powers. The writing on the seals is associated with symbolic animals representing clans or possibly trading communities. The most common animal, the unicorn, is mythical and the other animals must have had some important symbolic meaning. On the small tablets, writing and occasional narrative scenes are on a miniature scale, but they probably illustrate public rituals or events that were viewed by the entire community or city. Some tablets may have functioned as ritual tokens or souvenirs, not unlike the molded or inscribed amulets available at the tombs of saints or at important shrines in Pakistan and India today. **It is closely associated with cities, trade and ritual**. Writing and seals remained important to the politial and ritual elites as long as the trade networks and cities continued to exist. The script disappeared when the elites who used this means of communication in trade and ritual were no longer dominant. More than any other fact, the rapid disappearance of the seals and writing by 1700 BCE (based on recent dates from Harappa) demonstrates that writing was used exclusively by a small but powerful segment of the population and did not play a critical role in the lives of the common people. The seal carvers lost their jobs, and eventually, when new elites emerged, writing was not important. Molds used to make terracotta and faience tablets wee destroyed or discarded when they no longer had economic or ritual significance. Traders no longer stamped bundles with seals or scribbled names and messages on storage jars. And although many of the crafts continued to be practiced, the artisans had no need to inscribe copper tools or pottery vessels with the script…When Emperor Ashoka set up pillars and massive boulders inscribed with royal edicts around 250 BCE, he became the first ruler in ancient India to use writing to communicate to the masses…The important thing was that these **edicts**, placed throughout the imperial realm, from Afghanistan to southern India, were not written in Sanskrit, the language of the Brahmanical elites, but **were in the major local dialects**. Two new scripts were invented: Kharoshthi in the northwest was based on Aramaic, the language of the Achaemenid Persian Empire and was written from right to left; the Brahmi script in peninsular India was written from left to right and is thought to have been derived from a Western Semitic script. No one knows who invented these scripts, but they may have been commissioned by rulers and developed by Brahmans well versed in literature and phonetics. The recent discovery of Brahmi script on potsherds from Sri Lanka dates to around 500 BCE (Frank Raymond Allchin, ed., *The Archaeology of Early Historic South Asia*, Cambridge University Press, 1995, 176-79), but the use of both Kharoshthi and Brahmi on stone edicts in the peninsular subcontinent dates somewhat later, around 250 BCE. Whey they first appeared, these newly invented scripts represent fully developed writing systems with no direct connection to the earlier Indus script. [Mohammad A. Halim and Massimo Vidale, Kilns, Bangles and coated vesssels: ceramic production in closed containers at Mohenjodaro, *Interim Reports Vol. 1: Reports on Field Work carried out at Mohenjo-daro, Pakistain 1982-83 by IsMEO-Aachen University Mission*, ed., Michael Jansen and Gunter Urban (Aachen: RWTH-IsMEO, 1984), 63-97]" (JM Kenoyer, 1998, p. 77).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Signs

391 and 392


Signs 395, 316, 317, 318 and Variants of Sign 393

The sign of a spoked wheel is also used on a metal weapon with ligatures: two short linear strokes and an arch. Part of the glyph in Sign 393 can thus be related to a copper vessel or plate.

kumpat.i = chafing dish (Te.); rebus: **gummat.a** cupola, dome (Ka.)

kin = sign of the dual; kamikin = the two workers; dar.et tahe~kanakin = they two were fleeing; gogockin = the two murderers (Santali.lex.) **kincit** = a little; **kincit gan emanme** = give me just a little (Santali) **kincit** = a little (Skt.)

kinn- (kinni-) to tear into strips (Kod.); kini- (kinit-) to break into pieces (Kol.); kink- (kinikt-) id. (Kol.); kinup to break, crack knuckles (Nk.)(DEDR 104). Kin small (To.); kinni small, young (Tu.); kinyo small (Kor.(DEDR 1603).
gina a metal vessel, metal cup (Kond.a); gina_ metal cup (Kuwi.Or.); kin.n.am, kin.n.i small metal cup (Ta.); metal plate (Ma.); kin.m metal eating vessel (To.); kin.n.alu brass cup (Tu.); ginniya, ginne cup, bowl, goblet (Te.); gina metal pot, cup (Ga.); gene a metal vessel (Go.)(DEDR 1543).
The earliest references to *cakra (*Pali. *cakka)* as a weapon, a *vajra*, occurs in the R.gveda (see text box article). Arjuna describes the *Vis'varu_pa* and refers to *gada_* and *cakra* of the divinity. (Bhagavad Gi_ta_, Ch. 11, v. 17).
Glyph: ***badhi*** 'to ligature, to bandage, to splice, to join by successive rolls of a ligature' (Santali) **bata_** bamboo slips (Kur.); **bate** = thin slips of bamboo (Malt.)(DEDR 3917).
hadi = a layer of stone or brick in the ground (Ka.); **padre** a layer (Ka.); **paduru** = id., stratum (Tu.)(DEDR 3915). [Note glyph of ringstones on pillar on tablets in bas-relief.]
Substantive: **patam** = sharpness (as of the edge of a knife)(Ta.); padm (obl. Padt-) temper of iron (Ko.); pada = keenness of edge or sharpness (Ka.); **hada** = sharpeness (as of a knife), forming (as metals) to proper degree of hardness (Tu.); panda_ sharpness (Go.); padanu, padunu = sharpness, temper (Te.); padnu = sharpening (of knife by heating and hammering)(Kond.a); pato = sharp (as a blade); **patter** = to sharpen (Malt.)(DEDR 3907).
The glyph connoted by 'road junction': **d.a~_d**. 'road'; **tan.t.a** 'cast iron'

Line 3 includes a set of four + three strokes, preceding the 'fish' glyph:

Glyphs: gan.d.a **'four';** pene **'three';**
Rebus: kan.d. **'furnace';** pen.e **'griddle'**
Glyph: **bhed.a** hako 'fish'; **bed.a** 'hearth'

kanac 'corner'; rebus: *kan~cu* 'bronze'

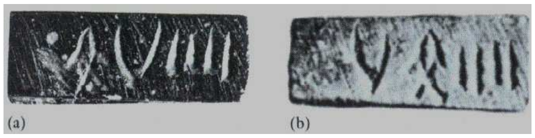
Alternatives:

bat.hi = a furnace for melting iron-ore (Santali.lex.)

bhati = the unripe kernel of certain fruits (especially of the Palmyra palm, the Ebony tree, and makar.kenda). The kernel is taken out and eaten, the palm kernel as it is, the Ebony kernel after cleaning with water rubbing it on a stone. (Desi. Bhati).

Harappa. Miniature tablets: (a) H-302 and (b) 3452; after Vats 1940: II, 452B; cf. Asko Parpola, 1994, Fig. 10.21, p. 194.

Harappa. Fish-shaped tablet (3428) incised. Eye is a

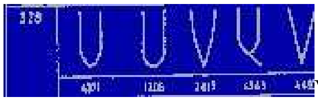
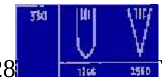
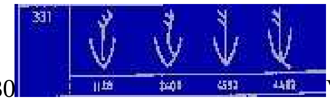


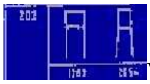
dot in circle. Drawn after Vats 1940: II, pl. 95, no.428; cf. Asko Parpola, 1994, Fig. 10.22, p. 194.

Silver ingot (Anatolia)

The two signs on an Anatolian silver ingot may connote: silver brick (ingot). The signs on the silver ingot faintly visible are comparable to glyphs of Sarasvati Civilization:

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

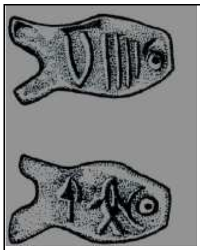
V328V
330V331
V332 [Glyph: *mer.go* ‘rimless vessel’; Substantive: *meruku* ‘shine, glitter, silver’]

V202 V
186

The two signs may connote: silver brick (ingot): *mer.go bed.a*

Cf. *be_d.a* ‘two anna piece of 12 pies’ (Te.)

Why the inscriptions cannot be sentences or personal names



It would be a surprise indeed if, in a writing system used ca. 5000 years ago, it was possible to compose sentences using just five signs.
Hundreds of inscribed texts on tablets are repetitions; it is, therefore, unlikely that hundreds of such inscribed tablets just contained the same ‘names’ composed of just five ‘alphabets’ or ‘syllables’, even after the direction of writing is firmed up as from right to left:

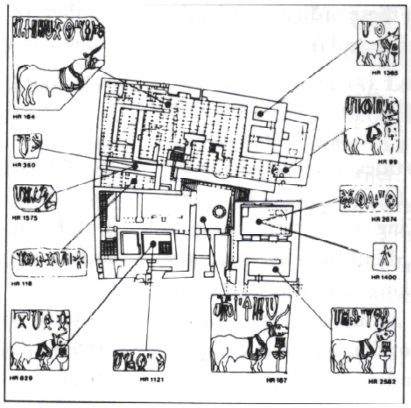
Many tablets (both incised and embossed varieties, generally made of faience, terracotta or stone) occur in multiples suggesting some form of distribution of common, identical ‘messages’ (or underlying material life-support phenomena).

Many attempts at decipherment of the inscriptions are summarized in Parpola (1994, pp. 57-61): "In summary, none of the attempts at deciphering the Indus script made so far (including that of our Finnish team) has gained wide acceptance… numerous tests agree in establishing right to left as the preponderant direction of writing in the Indus inscriptions… Mahadevan who has carefully recorded the direction of the original in each of his 3,573 lines, distinguishes 2,974 lines running right to left (83.23 percent) and 235 going left to right (6.57 percent), in addition to such ambiguous sequences as 190 single-sign lines, 12 symmetrical sequences and 155 cases that are doubtful on account of damaged or illegible lines. A top-to-bottom sequence is recorded for seven lines."

Why the inscribed objects can be related to the life-activities of the people

Many inscribed objects have been found together with other artifacts, suggesting a close relationship between the messages inscribed and the artifacts themselves.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



Seals have been found in almost every exposed room excavated in Mohenjodaro. In room 85 in house IX of the HR-area in Mohenjodaro were found five unicorn selas. In this room 'a mass of shell-lay was found…along with…many waste pieces of sea-shells' indicating this to be a shell-cutter's room (Mackay, 1931a: I, 195).

[House I, HR-A area, Mohenjo-daro: Find spots of twelve seals together with many prestige objects, all from one house; Wheeler assumed that this was a temple; the house has rooms immediately adjacent to the exit, transit rooms having more than one door, terminal rooms with just one door; seals were found in all these rooms. After Jansen, Michael, 1986, *Die Indus-Zivilisation: Wiederentdeckung einer fruhen Hochkultur*, Cologne, 200f., fig. 125]

Why the inscriptions cannot be interpreted as 'religious' texts

Parpola suggests (Corpus, 1, 1987, p. xvi) that the pictorial motifs (some of which are iconographic) indicate religious motifs and some seals (such as M-319 with a carved hollow to hold an amuletic charm and a lid) which are probably charms provide clues to the Harappan religion. He also adds that many miniature tablets of Harappa may have functioned as tokens of votive offerings or of visits to temples. He cites the examples of moulded tablets Mk-478 and M-479 where the combination of 4 U signs stands next to an iconographic scene where a kneeling worshipper extends a pot shaped like the U-formed sign towards a tree. "Apparently the tree is sacred, and the man is presenting the pot (or according to the inscription, four pots) to it as an offering… The interpretation of the iconography of the Indus seals and tablets constitutes a major scholarly challenge…Sir John Marshall's identification of a Proto-Siva in the buffalo-horned deity of a famous seal from Mohenjodaro (M-304) may well be correct, and so may be Alf Hiltebeitel's even more convincing identification of this figure as Proto-Mahis.a, although this deity and his 'yogic posture' have close counterparts in the earlier glyptic art of the Proto-Elamites. Comparative studies thus suggest that the Indus Civilization may have been an integral if marginal part of the West Asian cultural area and that there is an unbroken cultural continuity in South Asia from the Harappan times until the present day."

An enormous time-depth separates the inscribed objects of the civilization and the cultural traditions recorded during the historical periods of Bha_rata. Unless the texts are read in the context of the perceived 'religious' heritage, it will be an article of faith to hypothesise that the inscribed objects embody the later-day 'cultural' tradition.

Roots of epigraphy tradition

However, it can be established from archaeological evidence of the historical periods that a number of parallels can be drawn from the practices initiated during the mature periods of the civilization. Some examples can be summarized.

Copper tablets found in Mohenjodaro are incised with pictorials in inscriptions and script signs. The historical periods record the evidence of the use of copper tablets to authenticate title deeds or property transactions. This evidence is an apparent legacy of the Sarasvati-Sindhu Civilization. No other contemporary civilization has produced such definitive evidence of conveying property through copper-plate inscriptions.

There are 123 copper tablets with inscriptions excavated at Mohenjo-daro. Most of the tablets contain only one line inscriptions excepting on four tablets which have a second line. [See BM Pande, 1979, Inscribed copper tablets from Mohenjo-daro: a preliminary analysis in: GL Possehl, 1979, *Ancient Cities of the Indus*, Delhi, Vikas].

Among the ashes on a warehouse floor in Lothal were found a hundred clay tags, bearing inscriptions created by seal impressions on one side and of packing materials (bamboo, mattings, woven cloth,

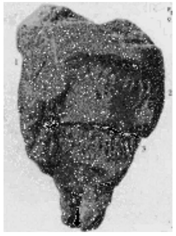
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

cords, reeds) on the other. Many had the glyph of an elephant.

ib ‘iron’ (Ko.); needle (To.); irumpu iron, instrument, weapon (Ta.); irumpu, irimpu iron (Ma.); irimbi iron (Kod.); inumu id. (Te.); inum (pl. inmul) iron, sword (Kol.); rumba vad.i ironstone (Kui)(DEDR 486).

Rebus: **ipil** ‘ a star’; *can.d.bol ipil* ‘a comet’; *jonok ipil* ‘a comet’ (Santali)

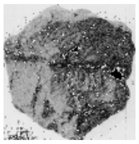
Rebus: **ibha** ‘elephant’[2]

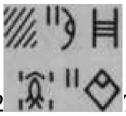


Lothal165A 7203

On 15 tags with seal impressions, the associated text is as shown on top line of Text 7236 and associated with ‘one-horned bull’ motif.

On 9 tags with seal impressions, the associated text is as shown on top line of Text 7251 and associated with ‘one-horned bull’ motif.



Lothal194A27251

It has been noted in earlier attempts at decipherment that many seals with inscriptions have cord holes, suggesting that the seals might have been worn by their owners. If so, it is likely that the inscribed objects were lists of property possessions of the owners.

Apart the use of copper tablets and in a few cases, the use of silver and copper for seals which indicates that the messages are possibly engraved by metal- and/or fire-workers (cf. the use of fired-in faience for seals), the dramatic clue to the decipherment of the script comes from the characteristic shapes of a few objects.

There are also inscriptions on bronze implements, re-inforcing the deduction that the metal- and/or fire-workers were the major script-writers of the civilization. If the writers of the script were also the owners of or traders in the products made from metal- and fire-work, then the messages conveyed were likely to be related to their life-activities. This is a possibility because at this stage of the evolution of chalcolithic cultures, ca. 3000 BCE, the differentiation in the labour-force might not have reached a stage when a separate group of or the profession of 'script-writers' had been recognized.

Taking a cue from the differentiation of functions among the artisans in Mesopotamian civilization, it is hypothesized that the inscribed objects of the civilization will present such a differentiation among the artisans of the Sarasvati Sindhu valleys. Smiths (Sum. simug, Akk. nappa_hum), responsible for (s)melting and casting, were distinguished from metalworkers (Sum. tibira, Akk. gurgurrum) who worked with metal and created objects. These, on the other hand, were distinctly different from jewellers (Sum. zadim) and goldsmiths (Sum. ku-dim/dim, Akk. kutimmum)... Given the large number of metal tools, weapons and vessels recovered from sites in southern Mesopotamia, there is, as with ceramics, a frustrating lack of excavated workshop facilities. (D.T.Potts, *Mesopotamian Civilization: The Material Foundations*, 1997, Ithaca, Cornell University Press).

In the Ur III period, the royal mausoleum of Shulgi at Ur yielded scraps of gold leaf which seem to have been part of architectural decoration, as was the case in the Jemdat Nasr period where the altar of the Eye temple at Tell Brak was decorated with gold leaf. The texts state that large numbers of metal-workers were employed by both the temple and the palace to produce a whole range of goods from tools to jewellery. These workers at Ur worked in groups under a foreman who reported to a general overseer. An assay office issued the metals to the foreman and weighed the finished article before counter-signing the receipts issued by the general overseer. In provincial towns, the governor himself issued metal from the treasury. Private metal merchants handled the supply of raw materials. (Mallowan 1947; Crawford, op.cit., p. 134).

There are two objects with identical texts (found at two distant locations):

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Identical texts on two seals: 1. From Kish (IM 1822); cf. EJH Mackay, 1925, *Sumerian connections with ancient India*, JRAS, 697-701; 2. Mohenjo-daro (M-228). [cf. Parpola, 1994, fig. 8.5].

Epigraphs are not names of 'owners'

Though the corpus is limited, it is notable that there is a substantial number of duplicate inscriptions; this is confirmed from the recent report of excavations at Harappa (1993 to 1995 and 2000 seasons). Obviously, the inscriptions do not represent 'names' of owners. The inscriptions could simply be 'functions' performed by or the 'professional title' of the person who carried the inscribed object on his or her wrist (or as a pendant attached to a necklace) or the list of objects he/she was invoicing for trade (as bill of lading or simply possessions of property items listed).

This hypothesis gets re-inforced by (1) the finds of inscriptions on copper tablets (again, with many duplicates – all apparently made by a metal-worker and hence may relate to metal objects produced, say, in an armoury); and (2) the presence of over 200 inscribed objects with no sign (only pictorial motif) or with just one or two signs. [The signs could hardly have been alphabets or syllables since there are not many 'names' attested in the historical periods with just one or two syllables.]

Direction of writing did not matter much

"Although it seems established that the Indus script was read from right to left (summarized in Mahadevan, 1977, pp. 10-14; Parpola, 1994, pp. 64-67), seal cutters must have engraved it from left to right. This can be shown in some cases by inverting the logic used to establish directionality of reading…Mahadevan (1977, p. 14) has noted that over 6% of the written items he documented have the script running from left to right…Directionality, in at least some instances, perhaps did not matter much, leading one to suspect that it may have been what the piece represented and not what it literally said that was important. " [Richard Meadow and Jonathan Mark Kenoyer, 1997, Excavations at Harappa 1994-1995: new perspectives on the Indus script, craft activities, and city organization, in: Raymond Allchin and Bridget Allchin, 1997, *South Asian Archaeology 1995*, Oxford and IBH Publishing, pp. 157-163].

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Mlecchita Vikalpa: Minerals, metals and furnaces

Perspective on rebus lexemes of Mleccha

Many epigraphs are records of possessions by lapidaries and smiths: of minerals, metals and furnaces and metal artifacts. Some could have been used as bills of lading (i.e. list of shipped commodities) in trade transactions to indicate the types of metals and alloys traded.

A number of lexemes of Bharatiya languages are seen to be concordant with hundreds of glyphs on hundreds of epigraphs. This concordance relates to graphemes (i.e. words which connote the glyph) and also homonyms (similar sounding words) which connote the substantive message.

In many cases, the substantive message relates to two categories: (1) minerals and metals; and (2) furnaces and tools-of-trade of lapidaries and smiths of the civilization.

Substratum languages in Bharat of vra_tya and yajn~ika

Bharatiya languages of the linguistic area circa 5500 years Before Present can thus be reconstructed with lexemes from the substratum languages which have enriched all the language family streams of Bharat. Just as it has not been possible for linguists to classify Nahali language (considered as an isolate but with significant 'indo-aryan' lexical entries), it is virtually impossible, with the present level of linguistic studies of substratum languages in Bharat, to identify the roots from any one language represented by present-day lingua franca of the nation. Many words presented in this summary will establish the undeniable fact that there have been interactions and inter-borrowings among the so-called Munda, Dravidian and Indo-Aryan language families. Further linguistic studies are required to precisely delineate the proto-indic or Mleccha language forms.

One possibility is that the parole, the language used by artisans of the civilization, the vra_tya and the yajn~ika alike, was Mleccha which Vidura and Yudhis.t.hira spoke in the Great Epic, the Maha_bha_rata.

Sample rebus lexemes

This work provides samples of rebus lexemes, i.e. lexemes which may be used to code the glyphs and signs of the epigraphs. Many more alternatives (both graphemes and homonyms) are presented in other sections and chapters.

These are intended to present an approach to the problem of decoding the epigraphs. In a few cases, it has not been possible to firmly establish the rebus equivalences (of graphemic words and homonymous substantive words); the alternatives are, therefore, presented for further evaluation by students and scholars engaged in the civilization studies.

Animal glyphs in groups

This can be viewed as a 'short-hand' crypt of the representation of some of these animals which appear in groups.

The following occur in groups:

rhinoceros, elephant, unicorn
rhinoceros, tiger
rhinoceros, elephant, tiger, buffalo, markhor (around a horned, seated person)
rhinoceros, elephant, tiger, two bisons face to face, scorpion
gharial, fish

The following ligatured motifs contain parts of field symbol motifs:

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

three tigers joined into a rhomb
bison + unicorn (head)
markhor + unicorn (copper tablet)
rhinoceros + elephant + zebu + snake (copper tablet)
rhinoceros + tiger + zebu (copper tablet)
tiger + zebu + buffalo (copper tablet)
tiger (head and front part of the body) + rhinoceros (back part of the body) + zebu (horns)(copper tablet)
bison (body) + three heads of: unicorn, markhor, bison
six heads: unicorn, bison, markhor, tiger + 2 other animals
unicorn (head) + unicorn (head) + leaves + stem?
unicorn (head) + octopus
tiger (body) + person + markhor (horns)
Composite, ligatured motifs contain the following field-symbol components:
zebu (horns) + face of man + tusks and trunk of elephant + neck and front legs of markhor + unicorn body) + hind legs of tiger + snake for a tail
(This image is also interpreted as: body of a ram, horns of a bison, trunk of elephant, hindlegs of a tiger and an upraised serpent-like tail)
Standing person has the shoulders of a man with horns and the hind-part of a bovine

Glyph, the dominant characteristic of epigraphs

A start is made with the decoding of the field symbols (pictorials) in inscriptions.

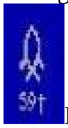
Out of about 3000 inscriptions recorded in the corpuses, over 1990 inscriptions contain ‘field symbols’. An object may have many sides and each side may feature a different field symbol with or without accompanying inscriptions (Mahadevan, p. 9; Table VIII: Distribution of field symbols by sites, pp. 777-779). Thus, field symbols (pictorials) constitute the major message component of the corpus of inscriptions.

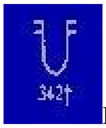
‘Reading’ these pictorials is an imperative to successfully interpret the ‘underlying language’ and ‘meaning’ of the inscriptions.

There will be continuing disagreements on the ‘orthographic values’ to be assigned to some ‘images’ or pictorials. For example, is the ‘unicorn’ an imaginary construction of a single horn on an ox or did such an animal, in fact, exist? Is the ‘image’ of a ‘bat’ a ligatured fish? If the fish sign a variant of a ‘loop’? There are, however, many images, which are emphatically deciphered orthographically, for example in such motifs as, elephant, tiger, bison, rhinoceros. A start can be made for the Decoding effort with such images with emphatic, orthographic clarity. Such a beginning will provide valuable clues to categorize the life-activities connoted by the texts and pictorials in inscriptions contained in the inscriptions.

Many glyphs are mostly calligraphically definitive. For example, a bull is a bull is a bull; an elephant is an elephant is an elephant. Many signs can also be interpreted as derived hieroglyphics derived from pictorial symbols.

There are, of course, problems in interpreting the orthography of some signs, for exampe:


Does this sign represent a fish or a loop?


Is this sign depicting a jar or a the face of a bull?

Is this sign depicting a knave of a wheel, a circle, an axle or a wheel with six spokes?

Hypotheses for interpreting epigraphs

Two interlinked hypotheses govern this study for interpreting epigraphs and may be elaborated further, as follows:

Hypothesis 1: Bha_rati_ya languages are derived from the lingua franca of the Sarasvati-Sindhu civilization. Selected lexemes of Bha_rati_ya languages provide the morphemes required to attach ‘sound-bites’ to the pictorials in inscriptions of the Harappan script, thus attesting to the continuity of the civilization in the present-day spoken languages of the sub-continent.

Hypothesis 2: The pictorials in inscriptions of the script represented ‘meaningful’ messages related to the life-activities of the civilization and, these messages can be read from ‘homonyms’ of the morphemes attached to the pictorials in inscriptions (cf. Hypothesis 1).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Epigraphs were descriptions of possessions and of weapons made by fire-workers

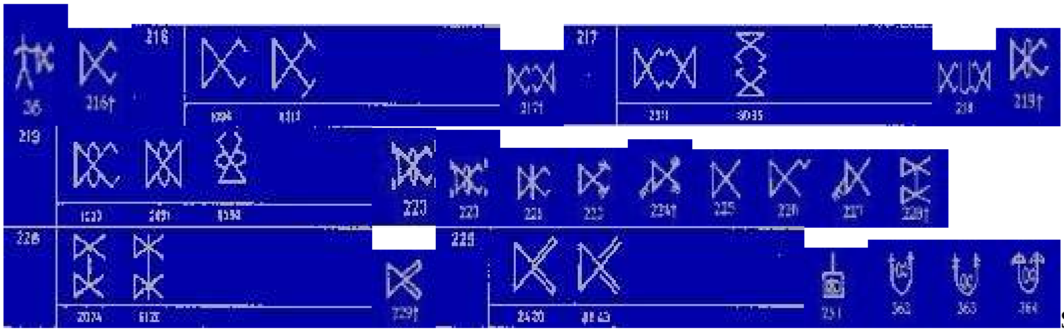
It would appear that many inscriptions were descriptions of possessions and of weapons made by the fire-workers (principally, metal-workers) of the bronze-age civilization, which matured ca. 3000 BCE

The Sarasvati and Sindhu rivers in NW Bha_rata sustained this civilization and the continuity of the Bha_rati_ya civilization into historical periods is confirmed by the underlying semantic unity of the Bha_rati_ya languages.

The fire-workers of the civilization produced the inscriptions related principally to the bronze-age artefacts, principally of weapons.

Jaws **kot.ir_ u** (Ta.) kot.re (Tu.), kor.i (Or.)
Top-leaf (2) **kod.ire** (Tu.), kod.i ele = betel leaf (Kod.)

kut.ila 'bronze (8 parts copper 2 parts tin)' (Skt.)



Signs 36, 216-229,251,362-364 + variants, ligatures **kut.ilikaka_** smith's tongs (Skt.)(DEDR 2052). Tongs (1) kot.il (Ma.), **kot.iru** (Ta.); kor. Hook of tongs (Ko.)

kot.a_ru, kot.a_ramu, kot.ha_ru = store-house, magazine, depository (Te.)

Bandicoot ko_d.el (Pa.) [**kod.el** = rat (Go.)]

Deer kod.al (Go.) [god.lu, go_dalu = horned cattle (Te.); gud.va = nilgai (Pa.)]

c023

god.el axe (Go.) kod.ari (Tu.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Tools-of-trade and property possessions of artisans depicted in epigraphs

Minerals, metals and furnace types

Presented below are a few examples of minerals, metals, furnace types, tools-of-trade and property possessions of artisans; many are lexemes from Santali, which explain some glyphs, using the rebus method (similar sounding words explaining the glyphs as well as the underlying substantive 'message'). The hieroglyphs of the civilization provide a framework for further linguistic studies to delineate the Proto-Indian structure of semantics and phonetic forms of lexemes.

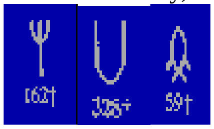
Properties of Graphemes

Many short and long linear strokes on the texts (when read in combination with the external archaeological evidence of the finds of binary chert weights) indicate the underlying practice of some form of 'accounting or measurement' or just 'counting' (?of property items) conveyed through the objects inscribed with messages (messages composed of pictorials and/or clusters of signs constituting texts of inscriptions). In some cases, the counting could be related to ratios, for example, the ratio of tin and copper used, 5: 8 (assumed) or 4:8 (assumed), 8 is assumed since 8 is a landing point in numeration.

'Numeral' signs or countable objects?

It is merely a conjecture that these signs 162, 325, 59 ane 387 denote landing-points in numeration, say, eight, twelve, twenty. These signs may, in combination with numerical strokes, connote a counted number of 'objects' and combinations of 'objects'.

Each of the signs (162, 325 and 59) seems to denote an 'object', and is frequently preceded by 'numerical strokes'. In this context, it is likely that each of these signs represents a substantive message, a possession or traded item -- say, a mineral or a tool-of-trade of a lapidary or smith.



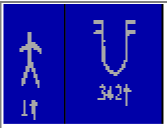
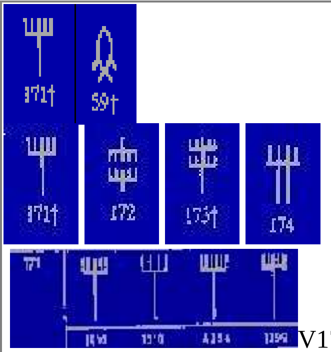
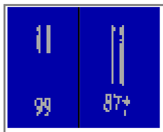
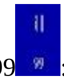
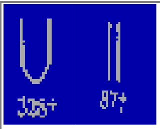
Sign 372 ('oval' grapheme) ligatures with sign 162, yielding sign 387

Stable pairs of signs

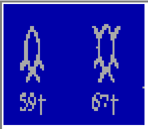
There are some stable sequences of signs in inscriptions, stability being measured by the frequency of occurrence of two signs within each inscription.

There are five pairs with between 65 and 87 occurrences in the inscriptions.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

	ten:go, ‘to stand’; ten:go, ‘to assume responsibility Rebus: tan:kam = pure gold (Ta.Ma.); t.an:ka = a stamped (gold) coin (Skt.)(DEDR 3013). mountain **kan.d.,** ‘pot’; **kan.d.,** ‘furnace’ [i.e. person managing a furnace]. te_jate_ = is sharp, sharpens (RV); te_jati = is sharp, shapens, incites (Pali); te_ai sharpens (Pkt.); tevn.e~ = to shine, burn (M.)(CDIAL 5945). Te_jas = sharp edge of a knife, glow (RV); fiery energy (AV); te_h = fire, arrogance (K.)(CDIAL 5946) tega = a sword; tega_ = a scimitar (G.Persian) tega_r = property, substance (G.Persian)
V171	**ken.t.a** ‘fish’; **ke~r.e~** brass or bell-metal; Alternative 1: hako, ‘fish’; hako, ‘axe’; Alternative 2: **a~s** = scales of fish (Santali); rebus: aya = iron (G.); **ayah**, **ayas** = metal (Skt.) kun.t.e, **khu~t.i**, ‘harrow, stake’; **kut.hi**, ‘furnace’ Alternative: **ad.ar** ‘harrow’; **aduru** ‘native metal’
	**ib** 'two' (Ka.); rebus: **ib** 'iron' (Santali) Sign 99: *at.ar* a splinter; *at.aruka* to burst, crack, slit off, fly open; *at.arcca* splitting, a crack; *at.arttuka* to split, tear off, open (an oyster)(Ma.); *ad.aruni* to crack (Tu.)(DEDR 66). Rebus: **aduru** ‘native metal’ (Ka.) san:gad.a, ‘two’; san:gad.a, ‘portable furnace’; sal, ‘splinter’; sal, ‘workshop’ OR **kin** ‘two’ rebus: **gina** ‘metal vessel’ Alternative decoding for Sign 99: **por** space between joints (H.); per joint, articulation (M.) Two, pair **par** (To.) **por-** ‘to sell’ (Ko.) **bari_** = blacksmith bari_ = anvil
	**bat.i** 'wide-mouthed metal vessel' (H.) rebus: **bat.hi** = smelting furnace, kiln (Santali) **bhra_s.t.ra** (Skt.) The pair could mean 'iron smelting furnace' san:gad.a, ‘two’; san:gad.a, ‘portable furnace’; kamat.ha, ‘wide-mouthe pot’; kammat.a, ‘furnace, coinage, mint’ Alternative readings of the ‘pot’ glyph:

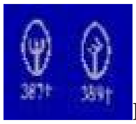
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

	Glyph: *mer.go* 'rimless vessel'; Rebus substantive: *meruku* 'shine, glitter, silver' Broad-mouthed pot ka_t.a = vessel for holding liquid (KS. X.6.4); ka_t.i (Ta.), kha_ri_ = a measure of capacity for grain (Ta. S.I.I., iii,9) **ka_t.i**-cca_l = broad-mouthed pot for keeping sour rice water (Ta.); ka_t.icca_lmu_lai = NE corner where waster water is emptied in a pot at a sacrifice (Ta.); gad.d.a proyyi = a fireplace or hearth with 3 or 4 inverted hemispherical clods placed on it (Te.) Rebus: **ka_t.i** = fireplace in the form of a long ditch (Ta.); ka_t.ya = being in a hole (VS. XVI.37); ka_t.a hole, depth (RV. i. 106.6) **ka_t.i** (Ta.) knife
	**ken.t.a** 'fish'; **ke~r.e~** brass or bell-metal; Alternative: hako, 'fish'; hako, 'axe'; **a~s** = scales of fish (Santali); rebus: aya = iron (G.); **ayah**, **ayas** = metal (Skt.) Sign 67 with four scales may be a count of 'four', **gan.d.**; rebus: **kan.d.** 'furnace'. kor-r-a, 'a fish'; *kot.ra hako* a species of fish (Santali); **kor-r-a**, 'mason'

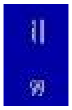
Word for Tin

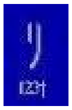
trapus = tin (TS iv, 7,5,1); **cakra-sam.jn~a** = tin (Skt.); [trapu = tin (AV xi.3.8); Taittiri_ya Bra_hman.a iii.12,6,5; Jaimini_ya Upanis.ad Brahman.a III.17.3; Chan_ndogya Upanis.ad IV.17.7); trapu = tin in enumeration of metals: Ka_t.haka Sam.hita_ xviii.10; Maitra_yan.i_Sa.hita_ii.11.5; Va_jasneyi Sam.hita_, xviii.13]

The Sanskrit lexeme cakra sam.jn~a connoting tin points to an early use of hieroglyphs to represent minerals and metals. Since **kana** (perhaps connoting copper or compounds occurring naturally) represented by a rhombus-corner is to be distinguished from molten cast copper together with tin, a cakra sign was used; the sign is given by the lexeme which connotes the knave of a wheel: **era. Hence, the term cakra sam.jn~a = lit. symbol of wheel.**

Another explanation is possible. 

It is notable that Skt. attest to the use of the compound, **cakra-sam.jn~a** [lit. 'circle' glyph] to denote tin; an echo of the writing system of the civilization: **mlecchita vikalpa!** (cryptogrpahy); is the use of a circle (oval?) glyph to ligature (or enclose) the **tagara** (*taberna montana*) glyph an echo of this explanation?



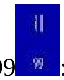
(83) 

(24) **Sign 391 (195)**

era, er-a = eraka = ?nave; **era**ko_lu = the iron axle of a carriage (Ka.M.); cf. irasu (Ka.lex.)

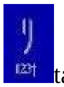
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

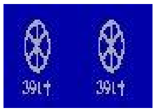
Metal: akka, aka (Tadbhava of arka) metal; akka metal (Te.) **arka** = copper (Skt.) **erka** = ekke (Tbh. of arka) aka (Tbh. of arka) copper (metal); crystal (Ka.lex.)
erako molten cast (Tu.lex.) agasa_le, agasa_li, agasa_lava_d.u = a goldsmith (Te.lex.)

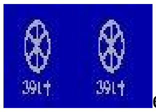
Sign 99: *at.ar* a splinter; *at.aruka* to burst, crack, slit off, fly open; *at.arcca* splitting, a crack; *at.arttuka* to split, tear off, open (an oyster)(Ma.); *ad.aruni* to crack (Tu.)(DEDR 66).

Rebus: **aduru** 'native metal' (Ka.) **aduru = gan.iyinda tegadu karagade iruva aduru = ore taken from the mine and not subjected to melting in a furnace** (Ka. Siddha_nti Subrahman.ya' S'astri's new interpretation of the Amarakos'a, Bangalore, Vicaradarpana Press, 1872, p. 330); adar = fine sand (Ta.); adaru = a sparkle (Te.); ayir – iron dust, any ore (Ma.)

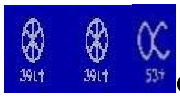
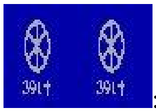
tot.xin, tot.xn goldsmith (To.); tat.t.a_n- gold or silver smith (Ta.); goldsmith (Ma.); **tat.t.e** = goldsmith (Kod.); tat.rava_~d.u = goldsmith or silversmith (Te.); *t.hat.t.haka_ra brassworker (Skt.)(CDIAL 5493).

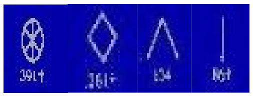
tat.t.ai = mechanism made of split bamboo for scaring away parrots from grain fields (Ta.); **tat.t.e** = a thick bamboo or an areca-palm stem, split in two (Ka.)(DEDR 3042).

 When reduplicated, this may be read as: **erako** 'nave' **san:gala** 'pair'; rebus: **erako** 'molten cast' **san:gad.a** 'furnace'. As distinct from non-melted native metal, aduru.

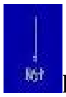
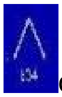
erako 'molten cast (copper)'; erako san:gala = furnace for metal.

This may explain the multiple use of the glyph on Dholavira signboard.

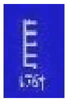
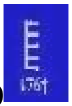
Glyph : **erako** 'nave'; **san:gala** 'pair' Rebus: **erako san:gad.a** = furnace for metal.

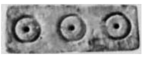


Glyphs: **erako** (nave); rebus: **erako** 'molten cast'.

Glyph: **kod.a**, 'one'; rebus: **kod.**, 'artisan's workshop'. Glyph: **ad.aren, d.aren** 'lid'; rebus: **aduru** 'native metal'

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

 (9) (10) **Sign 176 (355)**  Ivory or bone rods (12)

'Tree'Field symbol 44 (12)  h352C Dotted circles. Field symbol 83 (23)

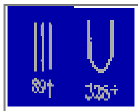
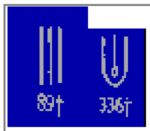
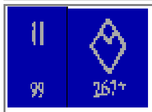
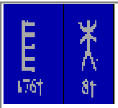
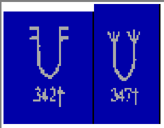
h172B Field Symbol 36 (17)

Glyph: comb **kangha** (IL 1333) ka~ghera_ comb-maker (H.)

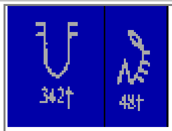
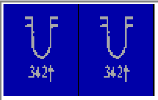
Rebus: **kan:g** = brazier, fireplace (K.)(IL 1332) Portable brazier **ka~_guru, ka~_gar** (Ka.) whence, large brazier = **kan:gar** (K.)

Pairing sign: **kan.d. kanka** 'rim of pot'; rebus: **kan.d.** 'furnace' + **kan-ka** 'copper metal'

The following seven pairs have between 93 and 291 occurrences in the inscriptions.

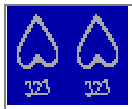
	Glyph: *mer.go* 'rimless vessel'; Substantive: *meruku* 'shine, glitter, silver'. Alternative: ka_t.i 'pot'; rebus: ka_t.i 'fireplace'; **tebr.a** = mint + attendant of an idol, tammat.a cf. tamta 'coppersmith' (Nepali); **dambr.i** 'one-eighth of a pice (copper)'
	ladle (tamali, cavat.u)+ ka_t.i = furnace for fuller's earth (cavat.u); tebr.a, 'three'; tamali, 'ladle' rebus: 'attendant of an idol';OR **dambr.i** 'copper'
	kanac 'corner'; rebus: kan~cu 'bronze' + kin 'two'; rebus: gina 'metal vessel'; hence, the pair connotes a bronze vessel Alternative: khu~t.a (corner) + s'il (splinter); rebus: kut.hi, 'furnace' + s'a_la (workshop) khu_n.t.ad.i_ = an angle (G.)
	mwehra_,'image';mehara, 'chief of village'; bakhor., 'teeth of comb'; bakhor., 'splicer for tassar cocoon'; bakher 'homestead'. Alternative decoding of Sign 176: Comb **kangha** (IL 1333) ka~ghera_ comb-maker (H.) **kan:g** = brazier, fireplace (K.)(IL 1332) Portable brazier **ka~_guru, ka~_gar** (Ka.) whence, large brazier = **kan:gar** (K.)
	kolom, 'sprout'; rebus: kolimi, 'furnace'; paired: san:gad.a, 'portable furnace'; kan.d, 'furnace'. This pair depicts two types of furnaces: one, for smelting (ore); and the other for melting, refining or alloying.

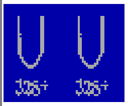
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

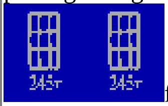
	**bharad.o** ‘spine’; rebus: **bharata** ‘casting metals in moulds’. Alternative: kamra, ‘back’; kamar, ‘blacksmith’; **kan.d.** ‘furnace’.
	kan.d., ‘furnace’; the pairing: san:gad.a, ‘portable furnace’. Or, barea, ‘two’; barea, ‘smith’ Alternative: kan.d. kin ‘two furnaces’; rebus: kan.d. ‘furnace’ + gina ‘metal vessel’

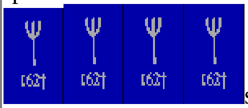
Reduplication of signs

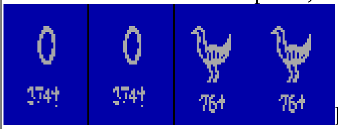
There are also paired or re-duplicated occurrences of signs.

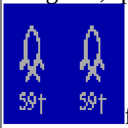
 leaf, ‘lo’; rebus: metal; pairing: san:gad.a, ‘portable furnace’

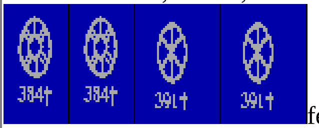
 pot, ‘kamat.ha’; rebus: kammat.a, ‘mint’; Alternative: ka_t.i ‘pot’; ka_t.i ‘fireplace’; + kin ‘two’; rebus: gina ‘metal vessel’;
pairing: san:gad.a, ‘portable furnace’

field division, ‘khan.d.’; rebus: khan.d., ‘sword’; pairing: san:gad.a, ‘portable furnace’

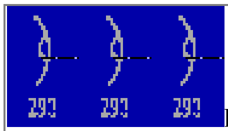
sprout, ‘kolom’; rebus: kolimi, furnace [A count of four furnaces].

kut.aru, ‘cock’; kut.ha_ru, ‘armourer, writer’; pairing: san:gad.a, ‘portable furnace’

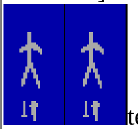
fish, ‘hako’; rebus: axe; pairing: san:gad.a, ‘furnace’

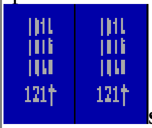
fellies, ‘put.ia’; rebus: put.ia, ‘copper’; put.a, ‘calcining’; pairing: san:gad.a, ‘furnace’

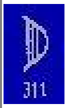
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



kan.d.era, ‘eyelid’; rebus; kand.ali, ‘billhook’ [A count of three billhooks]


ten:go, ‘standing’; rebus: ten:go, ‘assume responsibility’; pairing: san:gad.a, ‘portable furnace’; i.e. managing furnace.


s’an:ku, ‘twelve fingers’ measure’; rebus: arrowhead; or, talka, ‘palm of the hand (with twelve phalanges on four fingers)’; rebus; talika, ‘inventory, list of articles’; pairing: san:gad.a, ‘furnace’; thus a list of furnace articles. Alternative: **bed.a** ‘twelve (pies)’ (Te.); **bed.a** ‘hearth’. Thus two ‘twelves’ may be read as: **bed.a** + **baria** = hearth + blacksmith smith.

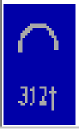

Lute can:gu (IL 2909)
Copulation san:ga_ (IL 2910)
Pannier s'an:kara, akkha (IL 2892)
Goose s'an:ku (IL 2879)

(14) **Sign 121 (70)**

barot.i = twelve (Santali) Rebus: **bharata** = a factitious metal compounded of copper, pewter, tin (M.)

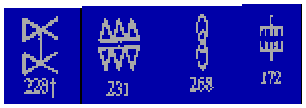
Glyph: twelve fingers' measure = **s'an:ku** (IL 2878), co~ga_ = two hand-breadths (IL 3121)

Rebus: **s’ankha** = *turbinella pyrum*, conch shell (Skt.)


kut.ila, ‘bent’; rebus: kut.ila, ‘bronze (8 parts copper, 2 parts tin)’; when duplicated a number of times, a count of bronze ingots

Mirror-reflected pairs of graphemes

This could be an orthograhic variant style to depict duplicated glyphs while conserving space on small objects used for inscribing epigraphs.



Pincer, **sanni_,** ‘smith’s vice’; rebus: **saniya**, ‘short sword’
Mountain, **bo_re**, ‘top of hill’; rebus: **bo_riga**, ‘hoe’

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Corner, **khu~t.a**, ‘corner’; rebus: **kut.hi**, ‘furnace’
Furrow, **khu~t.a**, ‘furrow’; rebus: **kut.hi**, ‘furnace’

Alternative homonyms/hieroglyphs:
ta_~ku = to touch, hit, attack, encounter, oppose in battle; n. combat, attack; ta_~cu = to kick (Te.); ta_n:ku = to hit against, strike (Ta.); ta_kuni = to hit, to touch (Tu.)(DEDR 3150).
t.an:kamu = top or side of a hill (Te.)
t.an:gu, t.an:guva_ru = a girth, surcingle (Te.)
Rebus: **t.an:ka** = a stamped (gold) coin (Skt.); tan:kam = pure gold (Ta.Ma.)(DEDR 3013) t.an:kasa_la = a mint; tan:kava_t.u, t.an:kasa_lava_ru = an old gold coin (Te.) t.an:kutanamu = artistic pride (Te.)

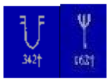
This could be an orthographic style of pairing to save space on a small inscribed object. Pairing may connote, san:gad.a, ‘two’; rebus: ‘portable furnace’

Mahadevan notes, "Compounds of mirror-reflected pairs. A rather curious feature of the script is the occurrence of mirror-reflected pairs as bound signs." (Mahadevan, 1977, p. 16) He adds that the mirror-reflected pairs may have the sign doubled on the horizontal or vertical axis. Mirror-reflection is also noticed on svastika_ glyphs with right-handed and left-handed arms.

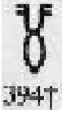
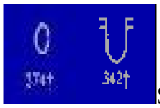
‘Ligatured’ signs

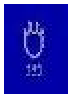
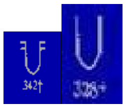
A characteristic feature of the use of graphemes in the inscriptions is ‘ligaturing’. Two or more signs can be combined into one sign motif. For example, the ‘jar’ sign is ligatured in four instances: An inverted ‘v’ is ligatured on Signs 65, 66, 75 (fishes), Sign 163 (corn sheaf), Sign 138 (cross-road), Sign 334 (pot). This inverted ‘v’ is also ligatured on a jar pictorial(Fig. 111 field symbol, Mahadevan corpus).

FS111 m0478 The glyph to the left of the tiger is a rim of a short-necked jar ligatured with a 'lid' glyph: ad.aren 'lid'; rebus: aduru 'native metal'; kan.d.a kanka = kanka metal furnace, i.e. furnace for copper and native metal.

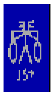
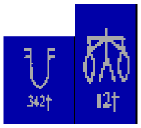
1  Sign 352, jar + corn sheaf

kan.d. + kolom = **kan.d. + kolimi** = furnace + furnace [One could be a portable goldsmith’s furnace; the other, a blacksmith’s (**kol**) furnace]

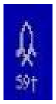
  Sign 394, jar and oval

  Sign 353, jar and pot

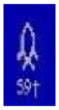
kamat.ha + kan.d. = **kammat.a + kan.d.** = mint + furnace

  Sign 15 itself seems to be a ligature of signs 12 and 342

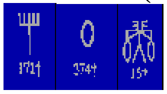
kan.d., ‘jar’; rebus: ‘furnace, altar’; **kut.i**, ‘woman water-carrier’; **kut.hi**, ‘furnace’; one is a refining goldsmith’s furnace; and the other a blacksmith’s furnace.

(40)  (76) **Sign 171 (132)**

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

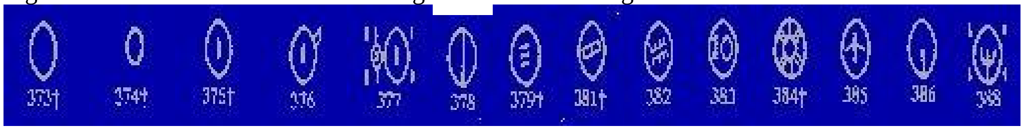
 (7) **Sign 173 (38)**

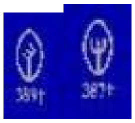
Glyph: **ad.ar** ‘harrow’ (Santali); Rebus: **aduru** ‘native metal’(Ka.)

 The ligaturing pattern is extended further in Sign 418: Sign 15 is further ligatured with a harrow (Sign 171) and oval (Sign 374).

Sign 373 could be a pairing of two ‘brackets’ (), thus, **kut.ila san:gad.a**, i.e. bronze furnace.

Sign 373 could also cirumscribe when ligatured with other signs:

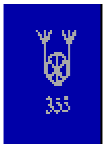
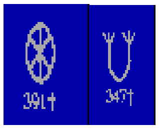


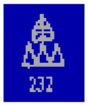
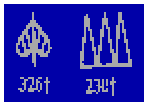
 The ligature is made up of two glyphs: **( )** together with **tagara** = taberna montana (Skt.) Rebus: t.agromi = tin metal alloy (Kuwi) **kut.ila** = bent, crooked (Skt.) kut.ila (Skt. Rasaratna samuccaya, 5.205) Humpbacked kud.illa (Pkt.)
Rebus: **kut.ila, katthi_l** = bronze (8 parts copper and 2 parts tin) [cf. a_ra-ku_t.a, ‘brass’ (Skt.)]

The ligatured signs could thus connote: bronze furnaces: **kut.ila** 'bronze' (Skt.) + **kolmi** 'furnace' (Ka.)

Two additional glyphs are ligatured; one of these is **khu~t.,** ‘harrow’; rebus: **kut.hi**, ‘(smelter’s) furnace’ [**kud.e**, a rat’s hole; thus, the type of furnace indicated by the water-carrier glyph may be different from a **kut.hi**, indicated by the harrow glyph] cf. **gud.d.e** = a heap, a pile (Ka.) One **kut.hi (kud.e)** may be by heaping up the ore; the other **kut.hi (gud.d.e)** may be a pit dug into the ground.

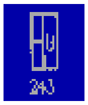
Pot a phonetic determinative? d.a_~gra = blacksmith; da_ka = pot (rebus: da_kali, anvil)]. In front of a tree without leaves: **d.ha_kal.** = bare of leaves (M.) **d.a_l.** = a branch of a tree (G.) **d.ha_l.ako** = a large ingot (G.)

  Sign 355 seems to ligature sign 347 and sign 391

  Sign 232 seems to be a liagure of sign 230 and sign 326

lo + bo_re = loha + bo_riga = metal hoe

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



The U sign could be bat.i 'broad-mouthed, rimless metal vessel'; rebus: bat.i 'smelting furnace'. The structural form within which this sign is enclosed may represent a temple: **kole.l** 'temple, smithy' (Ko.); **kolme** smithy' (Ka.)

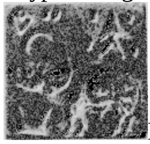
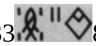
Thus, the ligatured Sign 243 may be read as: **kolme** **bat.i** = smithy furnace.

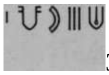
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

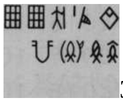
Bastion, *kottala*, trough

kottala bastion (Tu.); *kottal.amu k(r)ottad.amu* bastion (Te.); *kottal.am* bastion (Ta.); bastion stone pavement (Ma.); *kottal.a kottala* bulwark, bastion (Ka.)(DEDR 2090). *kot.ho* a warehouse; a tower (in Ka_t.hia_wa_d.); a revenue office, in which dues are paid and collected; *kot.* a nest, a fort; *kot.d.i_* a small room; *kot.d.a_*m pl. houses, walls; *kot.va_li_* the office of a magistrate; *kot.hi_* the residency of a political officer (G.)

Glyph: trough: *kottala* trough (Tu.); *kottal.am* trough (Ma.)(DEDR 2090).


Kalibangan033

8025

m0527Bt

3336

m0573Bt

3415

Smithy, *pasra*

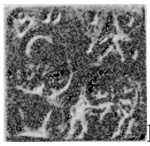
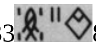
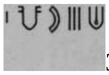
pasra = a smithy, a place where a blacksmith works; to do a blacksmith’s work; *kamar pasrat.hene sen akantalea* = our man has gone to the smithy; pasrao lagao (or ehop) akata = he (the blacksmith) has started his work (Santali); **pasra** (Mundari)(Santali.lex.Bodding) **pasra, pasa_ra** (Sad.; Or. **pasra_,** a blacksmith’s implements) = a blacksmith’s forge; the place where a brazier (t.ent.era, malar.a) makes his bowls, armlets; ne pa_l t.apuakana pasarate idiime = this ploughshare is blunt, take it to the smithy; the set of a blacksmith working in his forge; **pasra o** = of the blacksmith’s work in the forge; pa nasra = the length of a blacksmith’s work n the forge; **pasraili** = rice beer offered for sale; **pasra mer.ed, pasa_ra mer.ed** = syn. of **kot.e mer.ed** = forged iron, in contrast to **dul mer.ed**, cast iron (Mundari.lex.) **pan~ja_va_, pa~ja_va_** = brick kiln (P.); pa~_ja_ kiln (B.); paja_vo (G.)(CDIAL 7686). **paya_n** = potter’s kiln (B.)(CDIAL 8023). paja_vo = a kiln; cf. paca_vavum, to digest in the stomach (G.lex.) **pa_car-ai** = pa_t.i vi_t.u, i.e. town house or army house (Pur-ana_.)

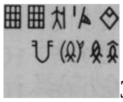
prasta_ra = a process in preparing minerals (Skt.); prastara = anything strewn, grass to sit on (RV); rock, stone (Skt.); pa_thar = stone (Ku.A.b.); patthal = hailstone (Bi.)(CDIAL 8857). pathraut.i_ = clay mixed with fine gravel (Bi.)(CDIAL 8861). pasa_re, pasa_ra = a grocer’s shop (Ka.Te.); **pasarike, pasara** = articles of a shop (Ka.lex.)

pa_s'o = a silver ingot; pa_s'a_ta_n.iyo = one who draws silver into a wire (G.) **pa_slo** = a nugget of gold or silver having the form of a die (G.)

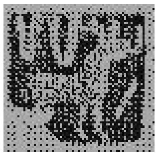
pasaramu, pasalamu = an animal, a beast, a brute, quadruped (Te.lex.) Thus, the depiction of animals in epigraphs is related to smithy, **pasra.**

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Kalibangan033 8025 m0527Bt 3336

m0573Bt 3415

pa_so = a die (Skt. pa_s’a]; pa_rasa = the philosopher’s stone [Skt. spars’, to touch]; pa_ras-pi_pal.o = a kind of pipal tree (G.lex.) [Note the glyph, ‘dotted circle’] **pa_s'aka, pa_cike, pa_san:gi, ha_san:gi, pa_s'a** = a die used in playing (Ka.) **pa_so** = a die (G.)



On this seal: a slanted linear stroke is depicted fronting a deer: Pict-49 Uncertain animal with dotted circles on its body. The depiction of dotted circles on a small deer pisera_ could represent a bead workshop
: **pot** 'bead' + **pasra** 'smithy'

pisera_ = a small deer brown above and black below (H.)(CDIAL 8365). pr.s.ata = spotted; spotted deer (VS.); pr.s.ita = spotted (n. ‘rain’ Gobh.); pr.s.at = spotted (AV); spotted antelope (R.); pasata-miga = spotted deer (Pali); pasaya = a kind of deer (Pkt.); pusia id. (Pkt.)(CDIAL 8364). paha_ru (P.); pa_hr.a_ = stag (P.) pa_ri_ (G.), paha_r, paha_ray (M.) Spotted antelope **pa_r.ho** hogdeer or cervus porcinus (S.); pa_hr.a_ (L.); pa_r.ha_ = spotted antelope, hogdeer (P.H.) pr.s.ata = spotted deer (VS.)

pa_msal.i_, pa_msal.um, pa_sum = a rib; **pa_s'ali_** = a rib (G.) **panjar** = a rib, the part of the body in which the ribs are; ibil panjar = the fifth rib; panjri = a rib, ribs; gad.i panjri = the cross bars uniting the shafts (hudar.) of a cart (Santali.lex.) cf. paks.a = wing, feather, fin, shoulder, side (RV)(CDIAL 7627) panjarao (Skt. panjari_, rib; Sad. panjraek) = a poke in the ribs with a stick (Mundari.lex.) pa_njarum = a frame; a skeleton; pa_kha = a side (G.lex.*) pajhrao, pajhr.ao* = to become lean, to lose flesh (Santali.lex.)

panjaramu = the body; skeleton (Te.lex.) panjara = skeleton, ribs (MBh.)(CDIAL 7685).

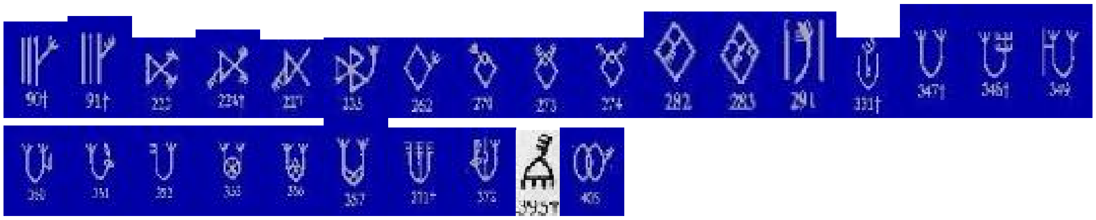
panjaramu = a cage for the birds (Te.) pa_njarum = a cage (G.)

panja_yi_, panju = a sort of torch (Te.lex.) panju, ponju = a torch (Ka.Te.); pantam (Ta.Ma.); panja_yi (H.); **panjuvid.iva, panjupid.iva** = a torch-bearer (Ka.lex.)

panje, panjho = the hand opened out; a claw, a paw; the five on a dice in play; *pasli_* the hollow of the hand (G.) pan~jali = with outstretched hands, as token of reverence (Skt. pra_n~jali)(Pali.lex.) pan~ja_ = the paw, the palm; the image of a hand worshipped and taken in procession during the Mohurrum festival (Te.lex.) *paslo* the cavity formed by putting two hands together (G.)

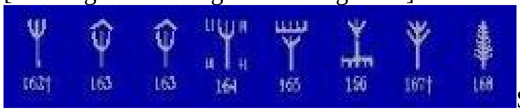
pasra = smithy (Santali)

pagra = a cutting of sugar-cane used for planting (Santali.lex.)



PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Signs 90,91,223,224,227,235.262,270,273,274,282,283,291,331,347-352,355-357, 371,372, 388-390,395,405 [With ligatures of Sign 162 or Sign 169]



Signs 162 to 168 [Orthography: sprout]. As a countable object, the sign represents the rebus of (number of) [brick] kilns, the number (count) being indicated by short linear strokes. A variant lexeme of Sign 167 (because of five petals shown) could be: **tagara**, *tabaernae montana*, a flowering, fragrant shrub; rebus: **takaram** = tin (Ta.lex.)

pasu_r.u, pasr.u = the condition of a man or boy with uncovered private parts; pasu_r.u-n = of the loin cloth, to slip or be pulled aside; of the parts, to be rendered or become visible (Mundari.lex.) [Note the orthography of the seated person with horns and bangles on his arms surrounded by a boar, a buffalo, a jumping tiger and an elephant].

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

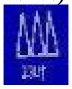
Mineral, stone

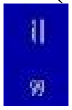
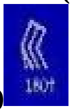
dha_tu ‘mineral’ (Vedic); **dhatu** a mineral, a metal (Santali); *dha_ta* id. (G.) ta_tu = powder (Ta.)(DEDR 3159) Possibly cassiterite? **tan.t.ava_l.am** = cast iron, iron rail, girder (Ta.); tan.d.ava_l.a cast iron (Ka.)(DEDR 3050). **dad.ko, dad.o** a lump; **dad.ba** a lump of earth, a clod (G.) **da_ntar-kut.ha** = fireplace (Sv.)(CDIAL 3546)

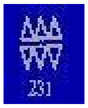
da~tela a large wild boar with huge tusks (Santali)

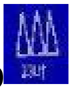
S'iva's dance ta_n.d.ava (Skt.); **da_n.t.u** = to jump, cross (Ka.); d.a_t. = to hop, jump, hop in dance, jump over (Kond.a) [See the glyph of a jumping tiger: semant. *da_t.* ‘to jump’; a tiger is horned on another epigraph: *ku_t.a* ‘horns’; ku_t.am = workshop].

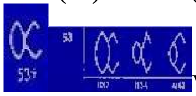
Line of catle **ta~_d.a._** a train or line (as of cattle)(M.); ta~_r.a_; dan.d.am = herd (IL 4362) dan.d.u (Te.); tan.d.a_ = caravan, troop, encampment, herd (Te.); tan.d.amu = troop, group (Te.); tan.d.aa = a group, party, assemblage (Apabhram.s'a) ta~_d.a_ = troop, party, compay (M.); tan.t.u = army, troops (Ta.); troop, detachment (Ma.); tan.d.u, tan.d.a army, host (Tu.); ten.d.i = herd (Kor.) dan.d.u, dan.d.a = an army (Ka.Te.); tan.t.u (Ma.Ta.) dan.d.ike = a row, a line, a series (Ka.lex.)

(11)  (16) **Sign 175 (54)**

 (18) **Sign 180 (44)** 

 **ku_t.amu** = summit of a mountain (Te.lex.) Rebus: **ku_t.akamu** = mixture (Te.lex.) **ku_t.am** = workshop (Ta.) The Sign 230 thus connotes an alloyed metal, **ku_t.a** [e.g. copper + dha_tu ‘mineral (ore)’ as in: **a_raku_t.a** = brass (Skt.)]

(14) (13) **Sign 230 (54)**  ‘Tree’ Field symbol 44 (5)

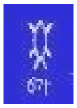
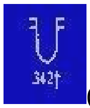
V053, Sign 53 **era_** = claws of an animal that can do no harm (G.) Rebus: **erka** = ekke (Tbh. of arka) aka (Tbh. of arka) copper (metal); crystal (Ka.lex.) **erako** molten cast (Tu.lex.) agasa_le, agasa_li, agasa_lava_d.u = a goldsmith (Te.lex.) akasa_la, agasa_la, agasa_liga, akasa_liga, agasa_le, akasa_le, akkasa_la = a gold or silver smith (Ka.lex.); akasa_like, akkasa_like = the business of a gold or silver smith; akasa_liga, akkasa_liga, agasa_liga = a gold or silver smith; akasa_le, akkasa_le = the workshop of a goldsmith; a goldsmith (Ka.lex.) eraka, er-aka = any metal infusion (Ka.Tu.); urukku (Ta.); urukka melting; urukku what is melted; fused metal (Ma.); urukku (Ta.Ma.); eragu = to melt; molten state, fusion; erakaddu = any cast thng; **erake hoyi** = to pour meltted metal into a mould, to cast (Ka.); cf. arika = rice beer (Santali.lex.) er-e = to pour any liquids; to pour (Ka.); ir-u (Ta.Ma.); ira- i_i (Ta.); er-e = to cast, as metal; to overflow, to cover with water, to bathe (Ka.); er-e, ele = pouring; fitness for being poured(Ka.lex.) erako molten cast (Tu.lex.) eh-kam any weapon made of steel (Cu_t.a_.); eh-ku steel; eh-ku-pat.utal to melt, to soften (Cilap. 15, 210, Urai.)(Ta.lex.)

era, er-a = eraka = ?nave; **era**ko_lu = the iron axle of a carriage (Ka.M.); cf. irasu (Ka.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

era female, applied to women only, and generally as a mark of respect, wife; hopon era a daughter; era hopon a man's family; manjhi era the village chief's wife; gosae era a female Santal deity; bud.hi era an old woman; era uru wife and children; nabi era a prophetess; diku era a Hindu woman (Santali)

d.ato 'claws or pincers (chelae) of crabs'; d.at.om to seize with the claws or pincers, as crabs, scorpions (Santali)


(16) 
(40) **Sign 53 (130)**
era_ = claws of an animal that can do no harm (G.) era, eraka = copper (Ka.)

er-r-a = red; eraka = copper (Ka.)

Substantive: **dha_tu** 'mineral' (Vedic); a mineral, metal (Santali); *dha_ta* id. (G.) tan.t.ava_l.am = cast iron, iron rail, girder (Ta.); tan.d.ava_l.a cast iron (Ka.)(DEDR 3050).
d.ato 'claws or pincers (chelae) of crabs'; d.at.om to seize with the claws or pincers, as crabs, scorpions (Santali)

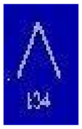
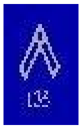
Pairing sign: **a~s** = scale of fish (Santali) Rebus: ayas = metal (Skt.)

The three signs together: Middle sign: **kan.d. kanka** 'rim of pot'; rebus: **kan.d.** 'furnace' + **kanka** 'copper metal' Flanking this sign are **d.ato** 'claws'; rebus: **dhatu** 'mineral'; **a~s** 'scales of fish'; rebus: **ayas** 'metal'. Thus furnace for metal and mineral.

dat.hi, dat.i the petioles and mid-ribs of a compound leaf after the leaflests have been plucked off, stalks of certain plants, as Indianc orn, after the grain has been taken off (Santali)

d.had.ra = lean, worn to a skeleton (Santali.lex.)

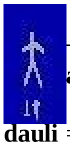
d.at.u, d.at.hu big headed, bullet-headed (Santali)

V136 Signs 134, 135, 136 d.a_t.o, da_t.o **a plug, a cork, a stopple (G.)**[1]

ta_t.u = to strike against, come in contact with (Ka.); ta_d.uni = to gore, butt; ta_d.u = goring (Tu.); ha-n.t.u to collide (Tu.); ta_n.t.i = to hit (Kor.)(DEDR 3156). t.at.he = to strike or beat with a stick (Santali)

m1283


at.ha crab (Skt.)

dauli = a weeding knife, of iron or wood (Santali.lex.) **da_ule, da_uli** = claw (Kon.); rebus: **ka~_kr.a_** crab; **ka~_gar** = portable furnace (K.); kammat.a = portable furnace (Te.) coiner, mint (Ta.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

got. = one (Santali) Rebus: **got.i** = silver (G.)
ka_t.hi = body; Rebus: **ka_t.i** = furnace[3]

kallan mason (Ma.); *kalla* glass beads (Ma.); *kalu* stone (Kond.a); *xal* id., boulder (Br.)(DEDR 1298).

Tarakai Qila01A Tarakai Qila01B

Stamp seal, large ibex walking left. Black steatite or chlorite, North Syria or Anatolia, 4th millennium BC, 1 rectangular gabled stamp seal, 4,7x5,1x1,3 cm, pierced through. *Provenance:* 1. Erlenmeyer Collection, Basel (before 1958-1981); 2. The Erlenmeyer Foundation, Basel (1981-1997); 3. Sotheby's 12.6.1997:8.

kala stag, buck (Ma.); *kal a.r.* Nilgiri ibex (Ko.); *kalai* stag, buck, male black monkey (Ta.); *kalan:kompu* stag’s horn (Ta.)(DEDR 1312)

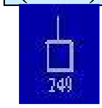
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

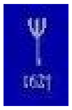
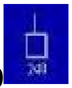
Tin, Pewter

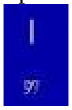
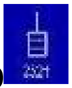
ran:ga, ran: pewter is an alloy of tin lead and antimony (an~jana) (Santali). **ran:ku** 'tin' (Santali) Tin, solder: ran:ga tin (Skt.); ram.ga (Pkt.); ra~_g pewter, tin (P.H.); ra~_ga_ pewter, tin (P.H.); solder (Or.Bi.Mth.); ra_n. tin, solder (Ku.N.A.B.); ra~_k (Ku.); ra_n.o (N.); ra_n:ga tin (Or.); ra_n:ga_ solder (Or.); ra_m.ga (OAw.); ranga tin (Si.)(CDIAL 10562). ra_n.(g)ta_ tinsel, copper-foil (B.)(CDIAL 10567). [cf. ren. cement for metallic objects (G.); ren.i_ ingot (L.)(CDIAL 10639).] **ran: t.odor** a wristlet of pewter (Santali.lex.) ran:ga = tin; splendour, brilliance, glow and glitter (Ka.lex.) ran:garincu = to mix or rub with the finger, as any liquid and a solid or semi-solid substance (Te.lex.)

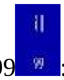
ran:ga, ran:gada borax (Skt.); run. saline ground with white efflorescence, salt in earth (Kho.)(CDIAL 10563). run:got solution of saline earth (Kho.)(CDIAL 10573).

rakamu = an item or article (of an account); an amount of money; an appointed quantity; a piece (Ka.M.H.); rakamu va_ru = article by article, piece by piece (Ka.M.H.)(Ka.lex.) rakam (Arabic rakm) an item; an article; a sum, an amount, a number (G.lex.) rakam upa_d.vi_ to borrow a sum of money; rakam na_me lakhvi_ to sell on credit a sum of money or an article of value, and enter it in the account-book (G.lex.)

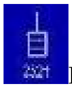
 **ran:ku** 'liquid measure (Mundari)

 (54) (47) **Sign 249 (170)**  **ran:ku** 'measure'; rebus: **ran:ku** 'tin' + **kolmo** 'sprout'; rebus: **kulme** 'furnace'

 (13) **Sign 252 (51)**  Copper tablet (11); bronze implements (2) 'Tree' Field symbol 44 (7)

may be a grapheme, a synonym of sign 99 : *at.ar* a splinter; *at.aruka* to burst, crack, slit off, fly open; *at.arcca* splitting, a crack; *at.arttuka* to split, tear off, open (an oyster)(Ma.); *ad.aruni* to crack (Tu.)(DEDR 66).

Rebus: **aduru** 'native metal' (Ka.) **aduru = gan.iyinda tegadu karagade iruva aduru = ore taken from the mine and not subjected to melting in a furnace** (Ka. Siddha_nti Subrahman.ya' S'astri's new interpretation of the Amarakos'a, Bangalore, Vicaradarpana Press, 1872, p. 330); adar = fine sand (Ta.); adaru = a sparkle (Te.); ayir – iron dust, any ore (Ma.)

 Liquid measure: **ran:ku**; rebus: **ran:ku** = tin (Santali)

ra~_go **buffalo bull (Ku.N.)(CDIAL 10559).** ra~_kat. **big and boorish (M.)(CDIAL 10538). cf. ran:ka slow, dull (Skt.)(CDIAL 10538).** ron:ke, ran:ke **the grunt of a wild buffalo (Ka.lex.)**

rakha = a secret term for three (G.lex.) [Three long linear strokes is a recurrent motif in inscriptions of the civilization and appear in contexts where the 'sign' should be read not as a numeral but as 'rakha', tin or made of tin + copper, i.e .bronze].

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

ran:ga ran:gi = fiercely quarrelling or disputing fiercely (Santali)

Glyphs showing mating[4] scenes

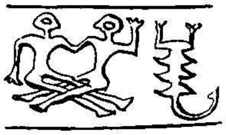
r-an:ku, ran:ku = fornication, adultery (Te.lex.)

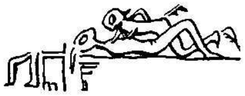
A bull mating with a cow. Seal impression (BM 123059). From an antique dealer in Baghdad. Cf. Gadd 1932: no. 18.

m0489At m0489Bt A standing human couple mating (*a tergo*); one side of a prism tablet from Mohenjo-daro (m489b). Other motifs on the inscribed object are: two goats eating leaves on a platform; a cock or hen (?) and a three-headed animal (perhaps antelope, one-horned bull and a short-horned bull). The leaf pictorial connotes on the goat composition connotes loa, the copulation motif connotes kamd.a; hence, the reading is of this pictorial component is: lohar kamar = a blacksmith, worker in iron, superior to the ordinary kamar, a Hindu low caste (Santali.lex.)]

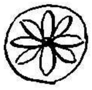
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Seal, Dilmun seal from Failaka island in the Gulf. A standing human couple mating (a tergo). [After Paul Kjaerum, 1983, *Failaka/Dilmun: the second millennium settlements, I.1: the stamp and cylinder seals*, Jutland Archaeological Society Publications, 17.1, Aarhus: no. 269]



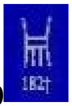


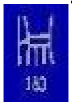
Seal, Dilmun seal from Failaka island in the Gulf. A standing human couple mating (a tergo). [After Paul Kjaerum, 1983, *Failaka/Dilmun: the second millennium settlements, I.1: the stamp and cylinder seals,* Jutland Archaeological Society Publications, 17.1, Aarhus: no. 269]

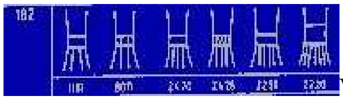
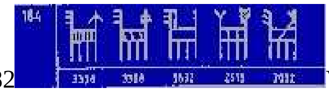
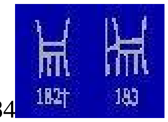
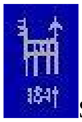


Coitus a tergo. A symbolism which reurs on some SSVC inscribed objects. Cylinder-seal impression from Ur showing a squatting female. L. Legrain, 1936, *Ur excavations, Vol. 3, Archaic Seal Impressions* "It seems probable that these seals (with erotic art scenes) were products meant for a lower level of state officials (the owners of the country estates, for instance) instead of those living in town in close contact with the center of administration." (Jack M. Sasson (ed.), *Civilizations of the Ancient Near East*, p. 2527).

Antelopes

(30) **Sign 182 (43)** h172B Field Symbol 36 (11)

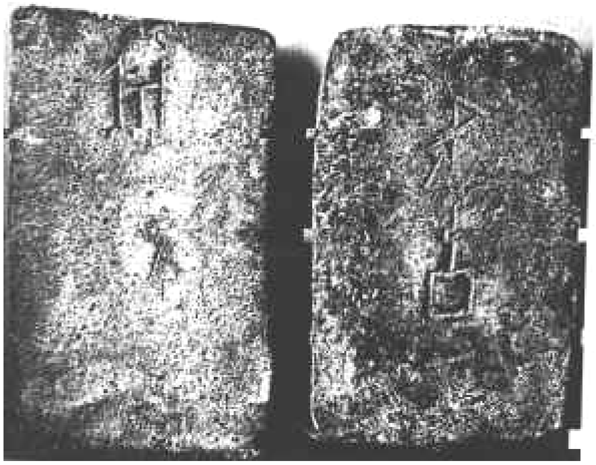
Sign 183 (11)  Copper tablets (10) Hare. Field symbol 16 (9) Hare = **kulai** (Santali) Rebus: **kol** 'metal of 5 alloys, pan~caloha' (Ta.)

V182V184Signs 182, 183, 184 The sign 182 is used on a copper plate epigraph and substitutes for an 'antelope' glyph.

Two tin ingots with Sarasvati epigraphs

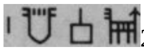
Two other rosetta stones are the two late bronze age tin ingots from the harbor of Haifa, Israel contain glyphs used in epigraphs of Sarasvati civilization!

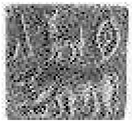
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

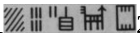
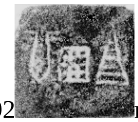


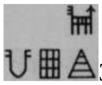
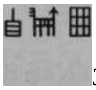
The picture of these two ingots was published by J.D. Muhly [New evidence for sources of and trade in bronze age tin, in: Alan D. Franklin, Jacqueline S. Olin, and Theodore A. Wertime, *The Search for Ancient Tin*, 1977, Seminar organized by Theodore A. Wertime and held at the Smithsonian Institution and the National Bureau of Standards, Washington, D.C., March 14-15, 1977]. Muhly notes:"A long-distance tin trade is not only feasible and possible, it was an absolute necessity. Sources of tin stone or cassiterite were few and far between, and a common source must have served many widely scattered matallurgical centers. This means that the tin would have been brought to a metallurgical center utilizing a nearby source of copper. That is, copper is likely to be a local product; the tin was almost always an import...The circumstances surrounding the discovery of these ingots are still rather confused, and our dating is based entirely upon the presence of engraves signs which seem to be in the Cypro-Minoan script, used on Cyprus and at Ugarit over the period 1500-1100 BCE. The ingots are made of a very pure tin, but what could they have to do with Cyprus? There is certainly no tin on Cyprus, so at best the ingots could have been transhipped from that island. How did they then find their way to Haifa? Are we dealing with a ship en route from Cyprus, perhaps to Egypt, which ran into trouble and sank off the coast of Haifa? If so, that certainly rules out Egypt as a source of tin. Ingots of tin are rare before Roman times and, in the eastern Mediterranean, unknown from any period. What the ingots do demonstrate is that metallic tin was in use during the Late Bronze Age...rather extensive use of metallic tin in the ancient eastern Mediterranean, which will probably come as a surprise to many people." (p.47)

We will demonstrate that the symbols incised on the ingots are not Cypro-Minoan symbols but Harappan pictographs.

m-1336a  2515 (Mahadevan)

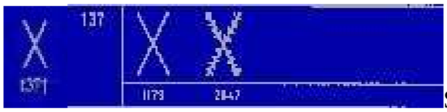
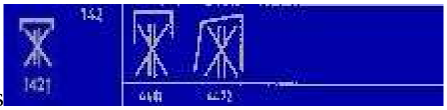
 m-1097 (On this seal, the antelope appears in the middle of the inscription; it is apparently this pictograph that gets normalised as a 'sign', Sign 184 and variants].

m1341  2092  m0516At

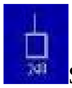
m0516Bt  3398 m0522At m0522Bt  3378

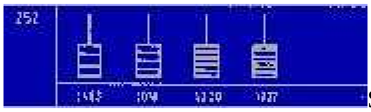
The sign pictographs are:

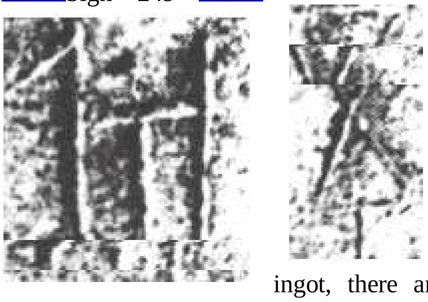
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com


Sign 137 and variants

Sign 142 and variants

kulhi ‘the village street’ (Santali) Rebus: **kol** metal (Ta.)


Sign 249

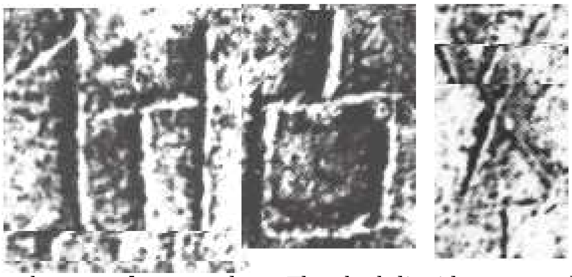

Sign 252 and variants



This pictograph clearly refers to an antelope as depicted on the Mohenjodaro copper plate inscription: (m-516b shown).

Sign 182 is a stylized glyph denoting a ram or antelope: **tagar** (Skt.); rebus: **takaram** ‘tin’ (Ta.)

On each ingot, there are two signs as shown below:



[Let us refer to these signs as, 'antelope' and X]

[Let us refer to these signs as, X and 'mould' or ‘liquid measure’].

Liquid measure: **ran:ku**; rebus: **ran:ku** = tin; rebus**: ran:ku** = antelope. Thus both liquid measure glyph and antelope glyphs are graphonyms (graphically denoting the same rebus substantive: ran:ku, ‘tin’.

X glyph which is common to epigraphs on both the tin ingots may refer to an ‘ingot’ or a **dha_tu** ‘mineral’. **upadha_tu** an inferior metal, a semi-metal: svarn.am ma_ks.ikam ta_rama_ks.ikam tustham ka_syam rati sindu_ram s'ila_jatu (Skt.)(Skt.lex.) **siddha-rasa** quick-silver (Ka.lex.) **siddha-dha_tu** quick-silver (Skt.); ore (as gold) (Ka.lex.) **cittam < kit.t.a** iron dross (Ta.lex.) **siddha-patra** hemp-leaves for smoking etc. (Ka.lex.) **dha_tu** strength, courage (Ka.); **dha_tu-ged.u** strength to be impaired or be gone; to become deprived of strength or courage (Ka.); **dha_tunas.t.a** loss of strength (Ka.)(Ka.lex.) The semant. ‘strength’ points to the dha_tu being tin since the addition of tin as an alloy strengthened copper. **sapta-dha_tu**, **tridha_tu** ‘seven/three elements’ are recurrently occurring compound lexemes in R.gveda.

In RV 6.044.23 the term used is: **tridha_tu divi rocanes.u** = ‘three-fold amr.tam hidden in heaven’ is the metaphor; and in RV 8.044.12 the term is: **tridha_tuna_ s’arman.a_.**

6.044.23 This Soma made the dawns happily wedded to the sun; this Soma placed the light within the solar orb; this (Soma) has found the threefold ambrosia hidden in heaven in the three bright regions. [**ayam tridha_tu divi rocanes.u**, **trites.u, trites.u vindat amr.tam nigu_l.ham** = Soma becomes as it were ambrosia when received or concealed in the vessels at the three diurnal ceremonies, which ambrosia is properly deposited with the gods abiding in the third bright sphere, or in heaven].

8.040.12 Thus has a new hymn been addressed to Indra and Agni, as was done by my father, by Mandha_ta_, by An:girasa; cherish us with a triply defended dwelling; may we be the lords of riches. [Triply defended dwelling: tridha_tuna_ s'arman.a_ = triparvan.a_ gr.hen.a, with a house of three joints; in RV. 1.34.6, tridha_tu s'arma = va_tapitta s'les.ma dha_tutrayas'amana vis.ayam sukham; in RVV 1.85.12 s'arma tridha_tu_ni = pr.thivya_dis.u tris.u stha_nes.u avasthita_ni sukha_ni gr.ha_ni va_; Note: it is possible that the term may simply mean, three elements, copper, silver, gold].

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Rebus (for the glyptic of crossing over):

da~_t.u = cross over; da.t.- (da.t.-t-) to cross (Kol.); da_t.isu – to cause to pass over (Ka.); da.t.- (da.t.y-) to cross (mark, stream, mountain, road)(Ko.); ta_t.t.uka to get over or through (Ma.); ta_n.t.u = to cross, surpass (Ta.)(DEDR 3158).

Rebus: **ta_t.u** = to strike against, come in contact with (Ka.); ta_d.uni = to gore, butt; ta_d.u = goring (Tu.); ha-n.t.u to collide (Tu.); ta_n.t.i = to hit (Kor.)(DEDR 3156).

ta_tu = powder, dust, pollen (Ta.); **to.0** = powdery, soft (of flour or powdered chillies)(To.). There is a possibility that the early semant. Of 'dha_tu' was cassiterite, powdery tin mineral.

The three signs used have parallels in the inscriptions of the civilization; in m-1336 the 'antelope' pictograph appears together with the 'mould' pictograph; **X** sign occurs on many inscriptions with many variants elaborating it as a junction of four roads:

The Sign 249 which is shown on the second tin ingot of Haifa, Israel is a representation of an ingot, assuming that this shows an ingot is shaped like the one taken out of a mould. The **X** sign (with a ligatured perpendicular short linear stroke) is common on both the tin ingots.

ran:ku a species of deer; ran:kuka (Skt.)(CDIAL 10559). ra_n:kava made from the hair of the ran:ku deer (Ka.lex.) ra~_kat. big and boorish (M.)(CDIAL 10538). cf. ran:ka slow, dull (Skt.)(CDIAL 10538). cf. ro_hi a kind of deer (R.)(CDIAL 10870). rauhis.a, ro_his.a a kind of deer (Ka.lex.) **ran:ku** 'antelope' (Santali) **ran:ku** = a species of deer (Skt.); ran:kuka id. (Skt.)(CDIAL 10559). ra_n:kava belonging to the ran:ku deer (MBh.); made from the hair of the ran:ku deer, woollen (R.); coming from ran:ku (said of animals) (Pa_n. 4.2.100); a woollen cover or blanket (MBh.R.); ra_n:kava ku_t.a s'a_yin lying on a heap of woollen rags (MBh.); ra_n:kavajina a woollen skin; ra_n:kavastaran.a a woollen coverlet (R.); ra_n:kavastr.ta covered with a woollen rug (Skt.); ra_n:kavaka coming from ran:kiu (said of men) (Pa_n. 4.2.134); ra_n:kava_yan.a coming from ran:ku (said of animals) (Pa_n. 4.2.100). ran:ku a species of deer or antelope (Skt.lex.) ran:ku = a species of deer or antelope, the spotted axis (mare)(Ka.lex.)

kurunga = a kind of antelope; kurunga miga = the antelope deer (Pali); kulunga, kulanga (Skt.)(Pali.lex.) kulan:ga (MaitrS.); kulun:ga (TS); kuran:ga, kurun:ga (Pkt.); kuram.ga (Pali); kuran:g (P.); karam.gi_ (OG.); kura~g (G.); kurunga (Si.); kurangu the elk *Rusa aristotelis* (Si.)(CDIAL 3320). cf. kuran:g light chestnut colour (Kho.)(CDIAL 3321). **kuran:ga** = a species of antelope, antelope or deer (in general); kulun:ga = an antelope (VS 24; TS 5); kuran:gaka, kulan:ga = antelope; **kuran:gama** = an antelope; **kuran:ga_yate** to take the shape of an antelope **(Skt.lex.) kurahu** antelope (Kuwi), kuran:ga (Ka.) kulanga, kulunga = going in a herd, antelope (VS.); kulmi = a herd (TS. ii.4.5.2)

Mleccha, copper

mlecchamukha = copper (Skt.); what has the copper coloured complexion of the Greek or Mahomedans]. meriya = a rock; merayu = to shine, glitter (Te.lex.) **mer** = a kind of large copper or brass pot (G.lex.) cf. **milakkhu** = copper (Pali); mleccha = copper (Skt.)

mer.ed, me~r.ed iron; **enga mer.ed** soft iron; **sand.i mer.ed** hard iron; **ispa_t mer.ed** steel; **dul mer.ed** cast iron; **i mer.ed** rusty iron, also the iron of which weights are cast; bicamer.ed iron extracted from stone ore; **balimer.ed** iron extracted from sand ore; **mer.ed-bica** = iron stone ore, in contrast to **bali-bica**, iron sand ore (Mu.lex.)

Substantive: *med.o* merchant' clerk (Hem.Dec.); *mehto* a schoolmaster, an accountant, a clerk, a writer (G.)
Glyph: *med.ho* a ram, a sheep (G.); *mid.hia_o* (Dh.Des.); *men.d.h*, *men.d.* a ram (Skt.); *medhya* a goat; fr. *medh* a sacrifice (Skt.) **mr..eka** = goat (Te.); mlekh (Br.) **mer.h, mer.ha_,** me~d.ha_ ram (H.), med.hia_o (Dh.Des.) ram, goat, sheep (G) mid.iyo = having horns bent over forehead (G.)(CDIAL 10120). **me~r.a_,**

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

me~d.a_ = ram with curling horns (H.)(CDIAL 10120). me_t.am = goat (Ta.lex.) [cf. the pictorial motif of antelope with head turned backwards]. **merom me~t** = the goat's eye (Santali.lex.) **mes.a** = ram (RV 8.2.40) **mer.om** = a goat; mer.om jel = the hind of the ravine deer, *gazella bennettii*; mer.om (Santali)

mer.go = with horns twisted back; mer.ha, *m.*, mir.hi *f.* = twisted, crumpled, as a horn (Santali.lex.)

mer.hao = to entwine itself, wind round, wrap around, roll up (Santali.lex.) [Note the endless knot motif].

h702At h702Bt 4601 m0271 Goat-antelope with horns turned backwards and a short tail

Three caprids. Tepe Yahya. Cylinder seal reconstructed from seven fragments. To the left of this pair is a third caprid rampant with head turned back whose horns are viewed frontally rather than in profile. Beneath the belly of each animal is a four-sided cross. There are 9 fragments of clay slab wall sealings. Wall plaster is preserved on the reverse of most fragments. Seal is carefully roled along horizontal axis of sealing. Lamberg-Karlovsky 1971: pls. 4, 5; cf. Fig. 10.27 in Pittman, 2001, opcit.

Two caprids with heads turned back rampant against a stepped platform (mountain) surmounted by a tree.

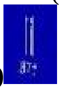
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Iron, ib

ib ‘iron’; **sund** ‘pit furnace’; sund = a subterranean passage, a mine, pit, large hole; koela la lateka sund akata = they made a deep pit by digging for coal (Santali) **kar.c ib** = very excellent iron (Ko.)

Two scorpions: **kacc + ib** = reduplicated terms for iron, very excellent iron [**kar.c ib** = excellent iron (Ko.)]

ib = two; as in: ibbaru = two persons (Ka.)

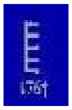
(42) **Sign 87 (365)**

Copper tablets (21)

ib = two (Ka.) Rebus: **ib** = iron (Santali)[5] ib = iron (Ko.); irumpu = iron, instrument, weapon (Ta.); irumpu, irimpu = iron (Ma.); ib = needle (To.); irimbi = iron (Kod.); inumu id. (Te.); rumba vad.i = ironstone (Kui)(DEDR 486). ibhya = rich, wealthy (Skt.)

Seal. Elephant. Elephant is covered with a saddle cloth. (After Scala/Art Resource)

ibha = elephant (Skt.) ibhi, ibhya = female elephant (Skt.Ka.Te.) ibhagati = a female with the dignified gait of an elephant (Ka.) ibhapuri = hastina_puri (Ka.) ibhahasta = an elephant's trunk (Ka.)

The depiction of a saddle cloth on the elephant may also be related to the orthographic significance of depicting a pannier[2] on a one-horned bull. It may connote a waist-zone, belt, **kamarasa_la** (Te.); rebus: **kamma_rasa_le** = workshop of a blacksmith (Ka.) When an elephant is shown on epigraphs with such a saddle cloth, the depiction may be of a kamma_ra ‘smith’ involved in ironsmithy: **ib** ‘iron’; rebus: **ibha** ‘elephant’.


(11) **Sign 211 (227)**

m1148 Field Symbol 7 (9) Sign 176 **kan:gha** 'comb' (H.) Rebus: **kan:ga** 'furnace' (K.) **bhallaka** 'arrow'; **bhallaka** 'copper'

[2] [Alternative: **kac** 'waist-belt'; rebus: **kacc** 'iron']

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Bronze

kas kasa bronze; *ka_s, kasa* bell-metal; *kasa pitar* bell-metal and brass (Santali) *kan~cu* bronze (Te.) *ka~c* glass (Santali) *ka_cu* gold, gold coin, money, a small copper coin (Ta.); *ka_s'u* gold, money, the smallest copper coin (Ma.); *ka.c* rupee (Ko.); *ko.c* id. (To.); ka_su the smallest copper coin, a cash, coin or money in general (Ka.); an old copper coin worth half a pie, a cash (Tu.); a cash, a coin in general, a gold coin, money (Te.); pice <Te. (Go.); *kars.a* (Skt.)(DEDR 1431). **kaca** = a piece, one quarter of an anna (Santali) **kase_ra_** metal worker (L.)[6]

kac, kas, kacci iron (Go.); *kacc* iron, iron blade (of spade)(Go.); *kacci* iron sword (Go.); sword (Kol.) ? < IA (DEDR 1096; CDIAL 2866) [7]

kars.a = gold coin (Vedic) **kasa** = quality of gold or silver (as determined by rubbing it on a touch-stone); kas. To rub, to test (Skt.); kas = pith (Arabic); kas = remunerativeness (of a trade)(G.) kasan. = rubbing, testing; kasan.uvum = to mix by gradually rubbing the ingredients together, to mix by rubbing (G.) kasot.i_ (kasa 'rubbing' + vr.tti 'a circle') a touchstone, generally round in form; making a trial, ann experiment (G.) kasabi_ = an artist, an artisan; adj. skilful, clever (G.) kasab (Arabic) a business, a trade, a profession; conversancy in an art, proficiency; an artifice, a device (G.) kasa_ya, kasa_ba a butcher (Ka.); kasa_i_ (M.)(Ka.lex.) kaca_ppu slaughter of animals for food; butcher (Ta.); kassa_b (U.)(Ta.lex.)

kasi_do (Persian kas'i_dan to draw) embroidery; a piece of brick or tile burnt in fire and turned hard (G.) kaja (kaji-) to be congealed, solidified by growing cold; ganja (ganji-) to solidify, coagulate, become solid (Kui); kajali = to be congealed, become curdled (Kuwi)(DEDR 1102). kas- = to be lit (as fire), burn (Kond.a); hiccu kahinomi = we kindle fire (Kuwi)(DEDR 1090).

kaca kupi = scorpion (Mand.); kasa (kasi-) to bite, sting (Kui); kaccinai = to bite, sting (Kuwi)(DEDR 1097). kharju_raka scorpion (Skt.); khajuro centipede (N.); khajria_ (Or.); khaju_ra_ (H.); khajura_ twisted (of thread)(H.)(CDIAL 3829). Bite: kaccu (kacci-) to bite, gnaw, nibble (nursery)(Ta.); koc to bite (To.); kaccu, karcu to bite, sting (Ka.); qaswe to eat greedily, nip off with the teeth (Malt.)(DEDR 1097).[8]

Rahman-dheri01A and B Rhd1: Two scorpions flanking a 'frog?' [?**kamat.ha**] and a sign **T** with two holes on the top, possibly to be tied on a string [Together with *bica_*, sand ore, the sign, 'T' may connote another ore, perhaps tin].
Glyph: **kaca kupi** = scorpion (Kuwi)

Pict-40: Frog.

2565 Frog

Rebus: **kanca_** = a marble (made of stone or lac)(Ka.) Stone beads! **ka_ca_** = glass (Santali) **kaca_ra** = dealer in glass bangles (Or.); **ka~_ca_r**, ka~_ca_ri_, ka_ca_r, ka_ca_ri_ = maker of glass bangles (M.); ka_cera_ = glass-worker (H.)(CDIAL 3012). **ka_s'i_** = glazing put on earthenware (S.); ka_yo, ka_vo, kacu = glass (S.) ka_seuli = stone cutter ka_si_d.u, ka_seva_d.u = a stone cutter, mason; ka_su = gold coin; ka_camu = glass; ga_ju = glass, glass bracelet or bangle (Te.)

kan~cu = bronze (Te.) kas-kut. = metal alloy (brass or bronze) ka~_se~ bell- metal (M.); bronze (Kon.) ka~ha_r = worker in bell metal; ka~_se = bell metal, kance_ra, kancari = bell-metal work (Te.)

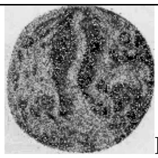
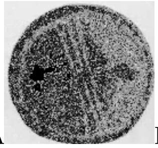
kacc = iron blade (of spade)(Go.); kas = iron (Go.) ka_ci (B.), ka_si (A.), kaciya_ (N.) = toothed

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

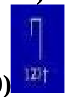
sickle (Bi.); reaping-hook (H.) kacci (Kol.Go.) kacia_ (Or.) ka~_jo = band of metal round joint of a khukri (H.)

V039 Cylinder seal; Louvre, ca. 3000 B.C
ka_tri = trap; **kha~_ca_** hen-coop B.H.P).); kha~_c basket for carrying birds (such as quails)(N.); kha~_ca_ large basket of tamarisk twigs (Mth.); kha~_ci_ small basket of tamarisk twigs (Mth.)

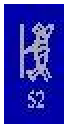
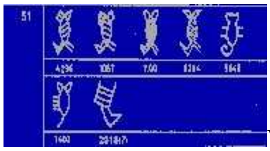
kiculaka earthworm (Skt.); **ke~su, kesu** earthworm (A.); ke~cua_, ke~co, ke~cui (B.); kecu, kecua_ earthworm, tape-worm (Or.); ke~cua_ earthworm (H.)(CDIAL 3459).

Lothal123ALothal123B Gulf seal.; the pair of antelopes flank a ligatured antelope, ligatured to a snake or earthworm). Circular style Gulf seal from Lothal (After Rao, 1985, Pl. CLXIb). "The Lothal seal (Persian Gulf Seal) is made of light grey steatite… Four circles with a central dot are also drawn on the back, while on the face is a reptile or dragon having two heads and flanked by two jumping goats or gazell-like animals with protruding eyes and looking over the shoulder. None of these figures has any resemblance to Indus motifs. On the contrary, the goat-like animals on the seal under discussion are more like the Sumerian goats…Some of the late circular seals from Failaka…assigned by Dr. Bibby to the Sargonic period, are identical in all details with the Lothal seal." (Rao, SR, 1985, *Lothal, A Harappan Port Town*, 1955-62, II, Delhi).
ran:ku 'antelope'
keccu 'earthworm'
Rebus: **ran:ku** 'tin'; **kas** 'bronze'.[9]

(58) **Sign 51 (105)**

(9) **Sign 127 (50)**

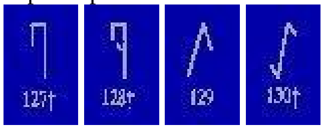
The pair of signs: Sign 51 and Sign 130 may thus be read as:
kaca kamar t.ot.ha = neighbourhood of bronze-smiths.

V051
If this represents a scorpion, it could be: **kamar** kidin:; rebus: kamar, blacksmith (Santali)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

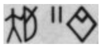
tutia, tutiya = bluestone, blue vitriol, sulphate of copper; **tutia reak misiko benaoa d.at.a hende ocoe lagit** = they make misi with bluestone to blacken the teeth (Santali); **tu_tiya_** (H.) **misi** is a powder composed of yellow myrobalan, gall-nut, vitriol etc. used for tingeing the teeth a black colour (Santali)[10]

This glyph is associated with Sign 130, which appears like a **to_t.t.i** See also Signs 127 to 129 which may depict a pole with a hook.



to_ttra goad for cattle or elephants (SBr.); tutta (Pali); totta, tutta (Pkt.); tutta (Si.)(CDIAL 5966). to_da driver (RV.); to_daga one who hurts (Pkt.)(CDIA 5969). to_ya pain (Pkt.)(CDIAL 5968). Image: pole with an iron hook: t.o_r.o_ a long stick with an iron hook; a pole with an iron hook or branch curved down at one extremity (Kur.); t.o_r.na_ to hook in (Kur.); tu~r.i_ a variety of the native rake or t.o_r.o_(Kur.); **to_t.t.i** elephant hook or goad, hook, clasp, sharp weapon planted in the ground to keep off enemies (Ta.); hook for driving an elephant, hook for plucking fruit (Ma.); do_t.i, lo_t.i pole with a hook for plucking fruit, gathering flowers (Ka.); do_n.t.i long pole with hook to pluck fruit (Tu.); do_t.i long pole with hook for cutting off fruit from high trees (Te.); t.o_t.al bamboo rake (Pa.)(DEDR 3547).[11]

Glyphs: animal in heat and trampling upon a long necked person (?)

It is seen from an enlargement of the bottom portion of the seal impression that the 'prostrate person' may not be a person but a ligature of the neck of an antelope with rings on its necks or of a post with ring-stones. The head of the 'person' is not shown. So, it may be surmised that this is an artist's representation of an act of copulation (by an animal) + a ligatured neck of another bovine or alternatively, a pillar with ring-stones ligatured to the bottom portion of a body (perhaps of a cow, why not?). It is not uncommon in the artistic tradition to ligature bodies to the rump of, for example, a bull's posterior ligatured to a horned woman (Pict. 103 Mahadevan) or standing person with horns and bovine features (hoofed legs and/or tail) -- Pict. 86-88 Mahadevan. Bison (gaur) trampling a prostrate person (?) underneath. Impression of a seal from Chanhujodaro (Mackay 1943: pl. 51: 13). The prostrate 'person' is seen to have a very long neck, possibly with neck-rings, reminiscent of the rings depicted on the neck of the one-horned bull normally depicted in front of a standard device.  6114

The pictorial motif on this Chanhudaro seal is compared with a pictorial motif on a Margiana stamp seal using line-drawings:

Left. Margiana, stamp seal: obverse, attacking lion; reverse: a bull copulating with a woman. ; Right: Chanhujo-daro seal: the bull is leaning over a lying woman with opened legs (Mackay, 1943, pl. 51:

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

13).

Tosi notes the occurrence of Harappan steatite seals and etched carnelian beads at ‘Bactrian sites’, materials which were found in the ‘looted graveyards of Bactria’. (Tosi, M., 1979, The proto-urban cultures of eastern Iran and the Indus civilization’, in in M. Taddei (ed.) *South Asian Archaeology* 1977, II. Naples: 643-59; Francfort, H.P., 1984, The Harappan settlement of Shortughai, in B.B. Lal and S.P. Gupta, eds., *Frontiers of the Indus Civilization*, Delhi, 301-10.)

The prostrate ‘person’ pictograph is comparable to the ‘scorpion’ glyph, ligatured to a lanky woman, shown at the bottom register of a Failaka seal. Obverse of steatite Dilmun stamp seal from Failaka Island (c. 2000 BCE).

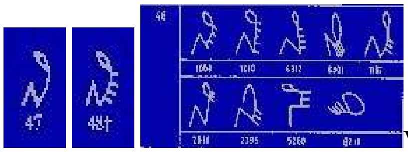
d.han:ga = tall, long shanked; *maran: d.han:gi aimai kanae* = she is a big tall woman (Santali.lex.) Rebus: **d.han:gar** 'blacksmith'

Obverse of steatite Dilmun stamp seal from Failaka Island (c. 2000 BCE). A human figure and a variety of animals – two antelopes one with its head looking backward; possibly a scorpion at the feet of the human figure. A dotted circle is seen above one antelope and a vase in between the antelope and the human figure. Kuwait National Museum. French Archaeological Expedition in Kuwait. Several inscriptions at Failaka mention the Dilmunite god Enzak and his temple or Mesopotamian deities. [Remi Boucharlat, Archaeology and Artifacts of the Arabian Peninsula, in: Jack M. Sasson (ed.), *Civilizations of the Ancient Near East*, pp. 1335-1353].

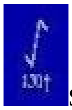
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Alloy: brass and bell-metal or bharan

ri_ti = yellow brass, bell metal (Skt.); ritika = calx of brass; ritika_ = brass (Skt.); ri_ri_, riri_ = yellow brass (Skt.); rit = copper (Dm.); ri_t (Gaw.); ri_da (Sv.); ri_a = brass (Bshk.); ri_ri_ = brass (Pkt.); **ri_l** = brass, bronze, copper (Sh.)(CDIAL 10752).

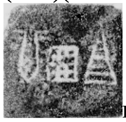

V048, Signs 47, 48 **ri_r.** = backbone (WPah.) ri_rh = backbone (Aw.); ri_r.h (H.); ri_d.haka = backbone (Skt.)(CDIAL 10749a).

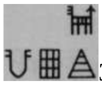
d.han:ga = a crook used for pulling down the branches of trees, for goats, sheep and camels (P.lex.)


Sign 130

The glyph 'skeleton' may also be explained as rebus: da_kali, da_gali = an anvil (Te.lex.) **d.ha~go** = skeleton; lean (Ku.); d.a_n:ga = one who is reduced to a skeleton (Or.); d.a~_gar, d.a~_gra_ = starveling (H.); d.ha~_kal., d.ha_~ku_l. = old and decaying (M.); d.ege = old, weak (Wg.)(CDIAL 5524).

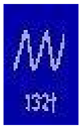
Rebus: **d.a_n:ro** = a term of contempt for a blacksmith (N.)(CDIAL 5524) t.ha_kur = blacksmith (Mth.); t.ha_kar = landholder (P.); t.hakkura – Rajput, chief man of a village (Pkt.); t.hakuri = a clan of Chetris (N.); t.ha_kura – term of address to a Brahman, god, idol (Or.)(CDIAL 5488). **dha~_gar., dha_~gar** = a non-Aryan tribe in the Vindhyas, digger of wells and tanks (H.); dha_n:gar = young servant, herdsman, name of a Santal tribe (Or.); dhan:gar = herdsman (H.)(CDIAL 5524). 4064. Blacksmith: t.ha_kur blacksmith (Mth.)(CDIAL 5488). d.a_n.ro term of contempt for a blacksmith (N.); d.a_n.re large and lazy (N.); d.an.ura living alone without wife or children (A.); d.a~_gar, d.a~_gra_ starving (H.); d.an.or unwell (Ash.); dan:gor lazy (Bashg.); d.angur (dat. d.anguras) fool (K.); d.a~_go lean (of oxen)(Ku.); d.a~_go male (of animals); d.a_n. wicked (A.); d.a_n:ga one who is reduced to a skeleton (Or.); d.i~glo lean, emaciated (Ku.); d.i~go, d.in.o abusive word for a cow (N.); d.in:gar contemptuous term for an inhabitant of the Tarai (N.); d.in:gara rogue (Or.); d.hagga_ small weak ox (L.); d.han:garu, d.hin:garu lean emaciated beast (S.)(CDIAL 5524). A tribe: d.ha~_gar., dha~_gar a non-Aryan tribe in the Vindhyas, digger of wells and tanks (H.); dhan:gar herdsman (H.); d.ha_n:gar. herdsman, name of a Santal tribe, young servant (Or.); dha_n:gar.a_ unmarried youth (Or.); dha~_gad. rude, loutish (M.); f. hoyden (M.)(CDIAL 5524). t.an:kan.a, t.an:gan.a name of a people living northwest of Madhyades'a (R.); t.am.kan.a a non-Aryan tribe (Pkt.)(CDIAL 5454). [cf. association of blacksmith and goldsmithy terms: t.an:ka-ca_lai < t.an:ka-s'a_la_ mint; t.an:kan.am borax (Ta.lex.) t.an:ka stone-cutter's chisel (Ta.lex.); spade, hoe, chisel (R.); stone-mason's chisel(CDIAL 5427). t.an:kam mace (Ma.)(DEDR 2940)].

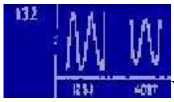

m0516At

m0516Bt

3398 [Copper tablet; side B perhaps is a graphemic representation of an antelope; note the ligatured tail comparable to the tail on m273, b012 and k037] **ri_r.** high mountain (WPah.)(CDIAL 10749a) **rir.** = a ridge; sakam rir. = the mid-rib of a leaf (Santali) buru rir. = the ridge of the hill (Santali.lex.)

The pictograph on m516 B (antelope) appears on a tin ingot found in Haifa, Israel. The antelope may be connoted by **ran:ku**, deer; ran:ga = tin.

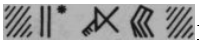
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



V132, Signs 132, 133 **ri_ti** = stream[3] (RV.); ri_i = path, fashion (Pkt.); ria = shallow narrow channel for catching fish, in dry season (Or.); ri_ = method, manner (G.)(CDIAL 10751)

r.s. = thrust (Skt.); r.s.t.i = spear, lance, sword (RV 1.167.3; 1.169.3; 10.87.7; 1.37.2; 1.85.4; 2.36.2); r.s.t.i-mant = equipped with spears (RV 3.54.13; 5.57.2; 5.60.3; 1.88.1); r.s.t.i-vidyut = glittering with lances (Maruts)(RV 1.168.5)(Vedic.lex.) r.s.t.i = spear, lance (RV.); it.t.hi spear (Pali); rit.t.hi sword (Pkt.); ris.t.i, ris.t.a sword (Skt.); hes.t. yoke-pole (Kho.Kal.); ri_t.h sword (H.); i_t.hi_ spear, spear-shaft (H.); **vi_t., it.a_, vit.a_** a spear carried before a ra_ja_ in procession (M.); it.i_ the bit of stick struck in the game of trapstick (S.); i_t.hi, i_t.i_ (H.); it.i_ (M.)(CDIAL 2461). r.s.t.i, ris.t.i = a sword (Ka.lex.) it.t.ti, i_t.t.i = spear (Ta.lex.)

ret rete = in line, in a row (Santali.lex.)

Pict103 Horned (female with breasts hanging down?) person with a tail and bovine legs standing near a tree fisting a horned tiger rearing on its hindlegs. 1357

rindi_ [**te rindi_ va lambante nodaka**-- said of breasts hanging down in old age. The text commentary compares them with leather water bottles without water (udaka-bhasta_ viya); rindi = shrunken as skins without water (Pali.lex.) rimd.i_ = an old torn worn-out garment (Pkt.); rin.d. widow (Bshk.); re~r.a_ = stunted wheat (Bi.)(CDIAL 10815). [On an inscribed objects, the pictograph depicts a person bending down with breasts hanging down]

d.okkara = thumping, strking, a blow (Ka.); t.ho_kara = thumping, striking against (H.)

*d.okri_* 'old woman' (Hi.); *dokri*, *dukri* 'old woman' (Kurku); *d.okra_* 'aged, old' (Hi.Mar.) *d.okro* an old man; *d.okri_* an old woman (G.) t.on:ku < d.on:ku (Te.) crookedness (Ta.); d.on:ku id. (Ka.)(Ta.lex.) dhokar.a decrepit, hanging down (of breasts)(Or.); duk hunched up, hump of camel (Kho.); dok[u] hump-backed (K.); d.okro, d.okhro old man (Ku.); d.okra_ old, decrepit (B.); decrepit (H.); old man (M.)(CDIAL 5567). d.osa, d.usa having a maimed or bent body (from disease etc.)(K.)(CDIAL 5563).

Substantive: *dhokra* 'metal worker'

bharatiyo, caster of metals

bharata = a factitious metal compounded of copper, pewter, tin etc.; green carbonate of lime (M.lex.) A semant. expansion occurs in the following lexemes: **bhart** = a mixed metal of copper and lead (G.) bharan.a = filling stuff, filling material (Ka.M.lex.) **bhoron** = a mixture of brass and bell metal (Santali.lex.) bhart-i_ya_ = a barzier, worker in metal; **bhat.a, bhra_s.t.ra** = oven, furnace; bari_ = blacksmith (G.) **barad., barhat.** = rough; not hard; brittle (G.lex.) **bharata** = casting metals in molds; bha_ravum = to keep live coals, buried in the ashes (G.lex.) **bharata** = fire in which the rice for bra_haman-s is boiled; name of Rudra (the Maruts are called his sons: RV 2.36.8); name of an A_ditya: Nir. 8.13); name of Agni (kept alive by the care of men)(RV); of a particular Agni (father of Bharata and Bharati_)(MBh.); a priest (r.tvij: Naigh. 3.18)(Skt.lex.) bharta = a method of cooking fish, mushrooms and vegetables by wrapping up in leaves and roasting in ashes (Santali.lex.) **bara_t.a** = a kind of firework (Tu.lex.) bharta = bake in live coals (Santali); bharta (Desi)(Santali.lex.) **bharan.yu** = fire (Skt.lex.)

[3] **bat.t.e** = a canal, a channel, a streamlet, a brook (Te.) Rebus: bat.hi = furnace (Santali)

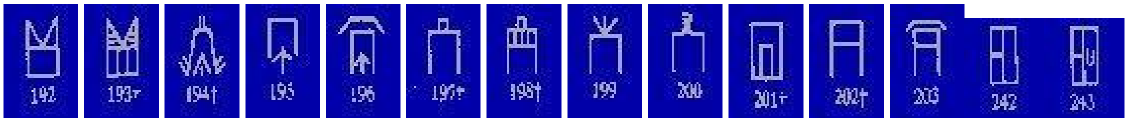
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

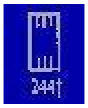
bharad = in comp. for bharat: bharadva_ja = bearing speed or strength (of fight); a skylark (Skt.lex.) **bharad**-va_ja = name of a R.s.i (with the patronym ba_rhaspatya, supposed author of RV 6.1-30; 37-43; 53-74; 9.67, 1-3; 10.137.1 and Purohita of Diva-da_sa, with whom he is perhaps identical; name of a district: Pa_n. 4.2.145; name of an Agni (MBh.)(Skt.lex.)

bharan = to spread or bring out from a kiln (P.lex.) **bha_ran.** = to bring out from a kiln (G.) **ba_ran.iyo** = one whose profession it is to sift ashes or dust in a goldsmith's workshop (G.lex.) bharant (lit. bearing) is used in the plural in Pan~cavim.s'a Bra_hman.a (18.10.8). Sa_yan.a interprets this as 'the warrior caste' (bharata_m – **bharan.am kurvata_m ks.atriya_n.a_m**). *Weber notes this as a reference to the Bharata-s. (*Indische Studien*, 10.28.n.2)

In the Punjab, the mixed alloys were generally called, **bharat** (5 copper, 4 zinc and 1 tin). In Bengal, an alloy called **bharan** or **toul** was created by adding some brass or zinc into pure bronze. Sometimes lead was added to make it soft. **bharatiyo** = a caster of metals; a brazier; bharatar, bharatal, bharatal. = moulded; an article made in a mould; bharata = casting metals in moulds; bharavum = to fill in; to put in; to pour into (G.lex.)

?furnace. Suffixed o-grade form *g^w*hor-no-*. **a.** fornax, furnace, hornito, from Latin *furnus, fornus, forna_x*, oven; *g^w*hr-*. **a.** burn from Old English *beornan, byrnan* (intransitive) and *bærnan* (transitive), to burn; ?**forge**. Middle English, from Old French, from Vulgar Latin **faurga*, from Latin *fabrica*, from *faber*, worker. **?hearth**. Middle English *herth*, from Old English *heorth*.

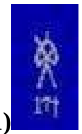




Glyph: *ba_ran.um* [Hem. Des. *ba_r, dva_r*, fr. Skt. *dva_ra*] a door, a gate, an entrance; the court-yard in front of a house; *ba_r* a door (G.)
Glyph: *ba_r* a courtyard in front of a house (G.)

Glyph: *khud.* A terrace of a house (Used in Ka_t.hiawa_d.)

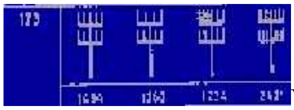
Substantive: *khud.do, khurdo* (Persian *khurdah*) small change in copper; *khurdiyo* a merchant who exchanges copper coins for silver (G.)

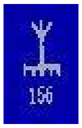
Sign 17 (91) The glyph is a ligature of a 'guard' + *ficus glomerta*: **loa + bhat.a** = iron smelting furnace.

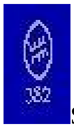
The term, **bharan**, evokes two semantic interpretations: 1) an asterism represented by pudendum muliebre and 'bearing in the womb'; 2) act of filling as in creating mixed alloys.

(26) **Sign 15 (126)**

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

V176 Ligatured signs: V173





Signs 176, 165, 166, 382 *ka_m.sako* = a large-sized comb (G.lex.) Alternative decoding of Sign 176: Comb **kangha** (IL 1333) *ka~ghera_* comb-maker (H.)

kan:g = brazier, fireplace (K.)(IL 1332) Portable brazier **ka~_guru, ka~_gar** (Ka.) whence, large brazier = **kan:gar** (K.); ka~_gri_ = small portable brazier (H.) ka_gni = a small fire (Vop.) ka_n:kai = heat of fire (Ta.); ka.g = black thread; blue cloth of olden times, now used for funeral purposes (To.)

ba_ran.e, ba_rane, ba_rpan.i = a comb; ba_runi = to comb the hair (Tu.lex.) **bar.ae**-bur.ui = to oil and comb someone's hair (Mundari.lex.) va_raki_ra = a small comb (Skt.); va_ruka = to comb (Ma.); va_r = to comb as hair (Ta.); ba_can.ige = a comb (Ka.); ba_grka_ wooden comb worn by boys and girls (Kur.)(DEDR 5357).

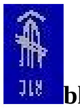
(114) **Sign 48 (168)** Copper tablets (13) h172B Field Symbol 36 (10)

Glyph: **t.hat.ra** = m. emaciated (Santali)

Rebus: **t.hat.era** = a brazier, a caste who manufacture and sell brass ware; t.hat.ori = a worker in brass, a goldsmith (Santali)

bharan.i_ 7th asterism (figured by pudendum muliebre)(AV.); **bharan.a** bearing in womb (RV.); **bhara** carrying, booty (RV.)[**bhr.** bear] **bharan.i_** 2nd asterism (Pali.Pkt.); second lunar mansion (G.) bha_reva_yi = pregnant (G.lex.)

barad.u, bar-ad.u = an empty pot (Ka.lex.) **bhala_n.d.e~** = the half-pot or the shard which, with fire in it, the gosa_yi_ or the gondhal.i_-people hold on their hand; gondhal.i_ are musicians and singers; gondhal. = a tumultuous festivity in propitiation of devi_ (M.lex.) **bha_liyo** = a waterpot (G.lex.) **baran.i, baran.e** = the trough of a water-lift; a china jar (Tu.lex.) **bhara.ni_** = a cooking pot (G.)

**bharad.o** = cross-beam in the roof of a house (G.lex.) bha_rat.iyum, bha_rvat.iyo, bha_rot.iyo = a beam (G.lex.) ba_ri = bamboo splits fastened lengthwise to the rafters of a roof from both sides (Tu.lex.) ba_rapat.t.e = chief beam lying on pillars (Te.lex.) **bharan.um** a piece in architecture; placed at the top of a pillar to support a beam (G.)

barot.i = twelve; as in: barot.i panjaram, adj. lit. = who has twelve ribs; important, who is able to get things done (Santali)

bha_rot.i_ = a bundle of fuel; bha_ro = a load, a bundle (g.lex.)

bharna = the name given to the woof by weavers; **otor bharna** = warp and weft (Santali.lex.) **bharna** = the woof, cross-thread in weaving (Santali); **bharni_** (H.) (Santali.Boding.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

bharad.o a devotee of S'iva; a man of the *bharad.a_* caste in the bra_hman.as (G.) **barar.** = name of a caste of **jat-** around Bhat.in.d.a; barar.an da_ mela_ = a special fair held in spring (P.lex.) **bhara_d.** = a religious service or entertainment performed by a bhara_d.i_; consisting of singing the praises of some idol or god with playing on the d.aur (drum) and dancing; an order of at.hara_ akha_d.e = 18 gosa_yi_ group; bhara_d. and bha_rati_ are two of the 18 orders of gosa_yi_ (M.lex.) **bharat.aka, bharad.aka** = a particular class of mendicants (Skt.lex.) **bharat.a** = a potter or a servant: Un. 1.104 (Skt.Ka.lex.) **bard** Middle English, from Irish and Scottish Gaelic *bard*and from Welsh *bardd*. One of an ancient Celtic order of minstrel poets who composed and recited verses celebrating the legendary exploits of chieftains and heroes. **2.** A poet, especially a lyric poet. **ballad**: etymology: Middle English *balade*, poem or song in stanza form, from Old French *ballade*, from Old Provençal *balada*, song sung while dancing, from *balar*, to dance, from Late Latin *balla_re*, to dance. http://www.bartleby.com

ba_rn.e, ba_ran.e = an offering of food to a demon; a meal after fasting, a breakfast (Tu.lex.) **barada, barda, birada** = a vow (G.lex.)

barad.o = spine; backbone; the back; barad.o tha_bad.avo = lit. to strike on the backbone or back; hence, to encourage; barad.o bha_re thato = lit. to have a painful backbone, i.e. to do something which will call for a severe beating (G.lex.) barad., barad.u = barren, childless; baran.t.u = leanness (Tu.lex.) *man.uk.o* a single vertebra of the back (G.)

vara_d., vara_d.h = a quarrel; vara_d.havum = to cause to quarrel (G.lex.)

marud.iyo = one who makes and sells wristlets, and puts wristlets on the wrists of women (G.lex.) **marad.a** = twisting; a twist; a turn; marad.avum = to twist, to turn; marad.a_vum = to bend; marod.a = a twist, a turn; writhing, a bend; marod.avum = to writhe, to twist, to contort; to bend (G.lex.)

bara_d.o = a loud cry (G.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Metal ingot, trade

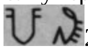
mu~h metal ingot (Santali) **mu~ha~** = the quantity of iron produced at one time in a native smelting furnace of the Kolhes; iron produced by the Kolhes and formed like a four-cornered piece a little pointed at each end; **mu_ha_ me~r.he~t** = iron smelted by the Kolhes and formed into an equilateral lump a little pointed at each end; **kolhe tehen me~r.he~tko mu_ha_ akata** = the Kolhes have to-day produced pig iron (Santali.lex.)

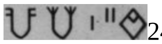
muh face (Skt.) **mu~he~** = face (Santali); **mu~h** (H.); **mu_ha_ mu_hi_** adj. adv. face to face, facing one another (Santali.lex.Bodding) Rebus: **mleccha-mukha** = copper (Skt.) mlekh = goat (Br.); mr..eka = goat (Te.)

sodo [Persian. **soda_,** dealing] trade; traffic; merchandise; marketing; a bargain; the purchase or sale of goods; buying and selling; mercantile dealings (G.lex.) **sodagor** = a merchant, trader; soda_gor (P.B.) (Santali.lex.) sadgal = a moneylender (Santali.lex.) **soda_gar** [Persian. fr. sodo + gar = Skt. kar, a doer fr. kr. to do] a merchant who deals in valuable things, or with large sums; **soda_giri** = dealing in valuable things or with large sums; adj. Mercantile, commercial (G.) **sod.ra** = a rolled up document, authority (Santali.lex.)[Note: use of cylinder seals to roll up and authenticate a transaction document on clay].

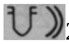
sodo bodo, sodro bodro adj. adv. rough, hairy, shoggy, hirsute, uneven; **sodgo** =adj. shaggy, having a large beard (Santali.lex.Bodding) **sodo bodgo** = hairy, hirsute, rough (Santali.lex.) [Note the bristly hair on the face]. Sadga badga = rough, surface uneven (Santali.lex.) **sodro** = a beard, a man with a beard (Santali) **sodro** = adj. bearded, large and rough (beard)(Santali)

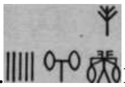
A human face with beard, is ligatured to orthographically represent a composite animal:

m0301  2258

m1177  2450 Composite animal: human face, zebu's horns, elephant tusks and trunk, ram's forepart, unicorn's trunk and feet, tiger's hindpart and hooded serpent-ligatured as a tail.

Kalibangan035 [Notes. (1) the bearded face ligatured to composite animal and to face]. markhor; (2) many animals shown face to face].

m1179  2606 Human-faced markhor with long wavy horns, with neck-bands and a short tail.

m1180a .  1303 Human-faced markhor [Note the twisted horns:

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Gold, mint

tan:kam = pure gold, that which is precious, of great worth (Ta.); pure gold (Ma.); t.an:ka = a stamped (gold) coin (Skt.)(DEDR 3013). **t.an:kasa_la** = a mint; t.an:kava_t.u, t.an:kasa_lava_ru = an old gold coin (Te.) **t.an:ka** = a stamped coin (Ka.) t.an:ka, t.an:ga = weight of 4 ma_s.a (Skt.); a stamped coin (Skt.); t.an:kaka = a silver coin (Skt.); tanka = ka_rs.a_pan.a (Khot.); t.am:ka = a stamped coin; t.a~_k button (N.); t.an:ka_ rupee (Or.); t.a~_k a particular weight (H.); a particular weight equivalent to 1/72 ser (G.); a particular weight (M.); t.an:ga_ a coin worth 2 paisa_ (H.); t.ako two paisa_, pl. money in general (S.); t.rakaku – worth two paisa_; coin of that value (S.); t.aka_ a copper coin (P.); t.a_ka_ two paisa_ (Ku.); t.ako money (N.); t.aka_ rupee (A.); t.a_ka_ (B.Bhoj.); t.aka_, t.akka_, t.akwa_ money (Mth.); t.aka_ two paisa_ coin (H.); t.ako (G.); t.aka_ (M.)(CDIAL 5426). ut.a~ko = rough estimate of weight, guess; ut.a~_kru~ to weigh (G.)(CDIAL 1682). chat.a_k 1/16 of a ser (about 2 ounces)(B.); chat.a~_k (H.)(CDIAL 12785). t.an:kas'a_la_, t.an:kakas'o = mint (Skt.); t.aksa_l, t.aksa_r (N.); t.a_ksa_l, t.a~_ksa_l, t.eksa_l (B.); t.aksa_r (Bhoj.); t.aksa_l, t.aksa_r (H.); t.a~ksa_l. (G.); t.a~_ksa_l, t.a_ksa_l, t.a~ksa_l, t.aksa_l (M.); t.aksa_l.i_ mint master (G.); t.a_ksa_l.ya_ id. (M.)(CDIAL 5434). **t.aka** = a rupee, money; to take money (Santali); t.aka_ (H.)

The most frequently occurring glyph is that of a one-horned bull with a pannier; it occurs on 1159 epigraphs (according to Mahadevan corpus). The orthographic accent is on the waist-zone, the pannier[12].
m1656 On this petoral, the pannier is vividly displayed. This is an orthographic feature unique to the one-horned heifer. It is a phonetic rebus determinative of the artisan's workhop.

Rebus: **ten:goc** = standing person (Santali)

tan:ga = a horse-belt; the belt by which the saddle is fixed right on the back of a horse; a garter (G.) **tan:gul.a, tan:gud.a** = a horse's or an elephant's trapping (Ka.); **t.an:gu, t.an:guva_r-u**, tan:gu, tan:guva_r-u= a girth, surcingle (Te.) t.an:gu, tan:gu, tan:gu = a girth, especially of a horse-saddle (Ka.M.Te.); tan:ga, tan:gu = id. (H.); t.an:guhar-e = the girth to be broken: to be reduced to poverty (Ka.) **t.a_kan.a, t.a_n:kn.a_** = a pony (Ka.Te.); t.a_kana_, t.ha_kan.a_ (H.) t.a~_gan. A species of pony (G.); t.a~_gan hill pony (H.)(CDIAL 5454). t.an:gna baber = the strap or thong by which a dancing-drum is carried (Santali)[4]

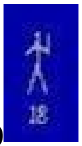
t.an:gao = to stop, hinder, obstruct (Santali) **tagar** = to be stopped or impeded; to impede (Ka.) ta_gu, ta_ku, ta_n:gu = to come in contact with, touch, hit, strike or dash against, attack (Ka.); ta~_ku = to touch, hit, attack; combat (Te.); ta~_cu = to kick; ta~_pu = a kick (Te.)(DEDR 3150). t.akka ar.inu = to come to a dead stop (N.); t.akvu~ = to stop (G.); t.eko = prop, obstacle (P.)(CDIAL 5420). t.akkara_ = blow on the head (Skt.); t.akkara = collision (Pkt.); t.akara (K.); t.akaru = butting (S.); t.akkar – pushing, knocking; t.akkarn.a_ to collide, meet (P.); t.akar = obstacle, collision (N.); t.akkar blow (B.H.G.M.)(CDIAL 5424).

---

[4] Glyph: **an.d.ige** = one pannier or pack, half a bullock load (Ka.); an.d.emu, an.d.iyamu id.; **a.digamu** = a sort of pannier (Te.)(DEDR 127).

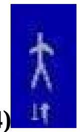
Substantive, **ingot**: **an.d.ige, an.d.e, ad.e** = a sticky, clotty mass, a lump, as of dates, tamarind, sugar, hair etc. (Ka.Te.); ad.egat.t.u = to become a sticky mass, to be clotted or matted together, as the hair etc. (Ka.Te.); ad.egallu = a stone-like mass of unclean hair (Ka.M.) **an.t.a** = matted or clotted hair; **ant.alugat.t.u** = to become matted or clotted (Te.) a~_t.ho, a~_t.i = bundle, sheaf, plait of hair (Ku.N.)(CDIAL 181).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

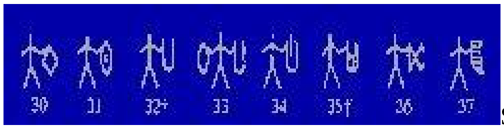
Sign 18 (27) Copper tablets (15) **dan:go, d.an:goro** = a thick club; a cudgel (G.lex.) t.an:kam = mace (Ma.); t.an:ke, d.an:ke, d.an:gi, d.an:ge = staff, cudgel (Ka.)(DEDR 2940). tan:ka, t.in:ka, tan:ka = a stone-mason's hammer; a stone-cutter's chisel (Ka.) t.an:ka = spade, hoe, chisel (R.); t.an:ga = sword, spade (Skt.); t.an:ka = stone mason's chisel (Pali); t.am:ka stone-chisel, sword (Pkt.); t.ho~ axe (Wot.); t.hon: battle-axe (Bshk.); tunger axe (Tor.); t.o~nguru kind of hoe (K.); t.a~_gi adze (N.); t.a~_ki_ chisel (H.); t.a~_k pen nib (G.G.); t.a~_ki chisel (M.); t.a_n:gi stone chisel (A.); t.a_n:g, t.a_n:gi spade, axe (B.); t.a_n:gi battle-axe (Or.); t.a_~ga_, t.a~_gi_ adze (Bi.); t.a_n:i_ axe (Bhoj.); t.a~_gi_ hatchet (H.)(CDIAL 5427). t.an:kita-man~ca = a stone (i.e. chiseled) platform (Pali); t.a~_kvu~ to chisel (G.); t.a~_kn.e~ (M.)(CDIAL 5433). t.ha_kun = to hammer (K.)(CDIAL 5487).

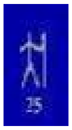
t.an:kamu = the top or side of a hill (Te.) t.an:ka = peak, crag (MBh.); t.akuru = mountain; t.akiri_ = hillock; t.a_kara low hill (S.); t.a_kuro hill top (N.); t.a_n:gi_ hill, stony country (Or.); d.aggara = upper terrace of a house; d.agar = little hill, slope (M.); d.a_~g, d.a~_k stony land (Ku.); d.a_n:ga_ hill, dry upland (B.); d.a~_g mountain-ridge (H.); hill tract (M.)(CDIAL 5423) d.an:ga, a reference to highlands. dan:ga, d.an:gal = highlands unsuitable for rice cultivation; d.an:gal ocokedam khet do = you have allowed the rice field to become high land (allowed it to be silted up with sand). dan:gaur.a = a rubbish heap; dangi = a part of the slop of a hill; buru dangi = above the bed.a; buru bed.a = the part higher up than the 'dhasna; buru dhasna = the foot of the hill. Thus, d.an:ga seems to connote a high level terrace of a mountain (Santali.lex.)

Glyph: *dotted circle*: **t.a_k** button (Sh.)(CDIAL 5426) **d.a_gu** = a stain, spot, blot, mark (Te.) **t.a_ka_, t.a_ki, t.a_ku** = a stitch (Ka.); t.a_ka_, t.a_ca_ id. (M.) **d.a_ku, d.a_gu** = a spot, stain, blot; a mark put on cattle with a red-hot iron; inoculated cowpox (Ka.M.); **d.a_ga** id. (H.Ta.); d.a_gu (Te.) t.a~kan.u = to stitch (S.); t.a~_ko = stitch (S.); sewing, patch (Ku.)(CDIAL 5432).

(14) **Sign 1 (134)** **t.ha_n:kum** = a skeleton (G.) ten:goc = to stand upright (Santali) **ten:go**, 'to stand'; ten:go, 'to assume responsibility (Santali) te_jate_ = is sharp, sharpens (RV); te_jati = is sharp, shapens, incites (Pali); te_ai sharpens (Pkt.); tevn.e~ = to shine, burn (M.)(CDIAL 5945). Te_jas = sharp edge of a knife, glow (RV); fiery energy (AV); te_h = fire, arrogance (K.)(CDIAL 5946) tega = a sword; tega_ = a scimitar (G.Persian) tega_r = property, substance (G.Persian)

t.a_n:kan.um = a chisel (G.); t.an:ka_ = an instrument for digging, khanitram (Hem.Des. G.)

Signs 30 to 37 an array of ligatures to the 'standing person' glyph, Sign 1. The ligaturing elements include on Sign 32 and Sign 36: a pot, and a carb (claws).



dhad.a [Hem. Des. **tan.d.am**] headless trunk; the trunk as distinct from the head (G.)[5]

Glyph: **t.ha_t.hum** = a frame-work, the body; t.ha_t.ha = state, dignity, pomp (G.) Hem. Des. t.ha_n.a

---

[5] Alternative homonyms: **ka_t.hi_** = body, person; **ka_t.hi_** the make of the body; the stature of a man (G.) **cola** = body, life; cola cabaentaea = he is dead; cola tahen bhor kami jarur.tabona = we must work on so long as we remain in the body (Santali) s'u_la = death, dying (Ka.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

= Skt. ma_nah pride, fr. Skt. stha_nam manner of standing, fr. stha_ ‘to stand’ (G.)

Rebus: **t.hat.era** = a brazier, a caste who manufacture and sell brass ware; t.hat.ori = a worker in brass, a goldsmith (Santali)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

An alloy of five metals, kol

There is a lexeme which connotes *pan~caloha*, an alloy containing five metals:: **kol** This word is represented *rebus* (lit. sounds like) by a tiger, **kolhu-o** (G.)

kol = *pan~calo_kam* (five metals); **kol** metal (Ta.lex.) **pan~caloha** = a metallic alloy containing five metals: copper, brass, tin, lead and iron (Skt.); an alternative list of five metals: gold, silver, copper, tin (lead), and iron (dha_tu; Na_na_rtharatna_kara. 82; Man:gara_ja's Nighan.t.u. 498)(Ka.) *kol, kolhe*, 'the koles, an aboriginal tribe if iron smelters speaking a language akin to that of Santals' (Santali) **kol** = kollan-, kamma_l.an- (blacksmith or smith in general)(Ta.lex.) kollar = those who guard the treasure (Ta.lex.) cf. golla (Telugu) **khol, kholi_** = a metal covering; a loose covering of metal or cloth (G.) [The semant. expansions to kolla_puri or kolha_pur and also to '**kolla_ppan.t.i**' a type of cart have to be investigated further].

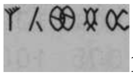
kol 'working in iron, blacksmith (Ta.); *kollan-* blacksmith (Ta.); *kollan* blacksmith, artificer (Ma.)(DEDR 2133)

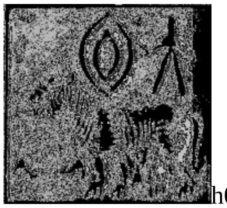
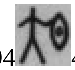
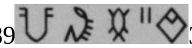
V267 Sign 261 **kan-** copper work, copper (Ta.)

kana kona = corner (Santali) [Glyphs of **corner + splinter** shown on the first line of the epigraph on the gold pendant, may thus connote: worker in copper.]

Alternative: **kolle, kolli** = corner (Ka.); **kolli** corner (Ma.) **kole, kuli** = a small space set apart in a corner of the house for fowls (Santali)[6]

Axe-head of brown schist (L 15 cm) with the head of a leopard or lioness on the butt. From the palace of Mallia, destroyed in LM I B ca. 1450 BC; but the axe-head may be older. The spiral-net design covering it was at home on clay vases at the beginning of the LM I period. The eyes of the animal were inlaid, and there were inlays in the drop-shaped hollows on the shoulders. The collar round the neck and the diagonal band running from it are reminiscent of the harness worn by the goats on the ring from Avdhou; the animal may have been conceived as drawing the chariot of some god (J. Charbonneaux, *Monuments Piot* 28, 1925-26, pp. 6-18) (After Plate 90 in: Sinclair Hood, 1971, *The Minoans*, New York, Praeger Publishers).

m1517Act m1517Bctm1518 1709

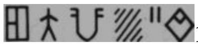
h0944246 m02893121

[6] **kundau, kundhi** corner (Santali) **kun.d.a** corner (S.); ku~_t. corner, side (P.)(CDIAL 3898).

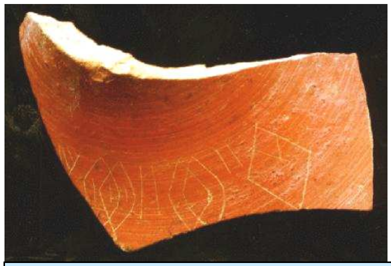
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

m0486at m0486bt m0486ct 1625

Interlocking bodies: **ca_li** (IL 3872)
Bull salaga (IL 3861)
cala_kai (Ta.) spear
Babool tree ja_li (IL 3868), sala_ = tree (IL 3897)
Quail salle (IL 3867)
Spider s'alaka (IL 3882a)

m0295 Pict-61: Composite motif of three tigers 1386 :
This unique ligaturing of three bodies of lions may connote an alloy of three metals.

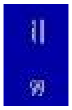
The first two signs of epigraph 1386 (from right) are also repeated on an inscribed potsherd from Bakarbuthi. Bakkar Buthi is a small Harappan site located in the remote mountanous area to the east of the Las Bela plain. The first phrase (first and second signs from the right) could be:

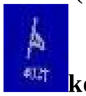


s'a_lika (IL) village of artisans. [cf. **sala_yisu** = joining of metal (Ka.)]

got.h, got. 'assembly' (Santali) **got.** = the place where cattle are collected at mid-day (Santali); gos.t.ha (Skt.); kod. = place where artisan's work (Kur.); cattle-shed (Or.) **kod.** = a cow-pen; a cattlepen; a byre (G.lex.) gor.a = a cow-shed; a cattlepsed; gor.a orak = byre (Santali.lex.) got.ho [Skt. kos.t.ha the inner part] a warehouse; an earthen vessel in wich indigo is stored (G.lex.) kot.t.amu = a stable (Te.lex.) Substantive: *got.h, got.* Place where cattle are assembled (Santali)

got.an:, *got.ec, got.en* used when reduplicated with 2,3, 4. *pepe got.an:* three each; *popon got.an:* four each (Santali). **got.a** = numerative particle (Mth.) **got.a** = the whole (Santali)

 (16) **Sign 402 (99)**

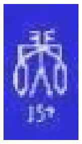
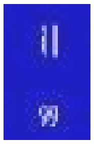
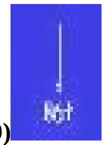
**ko_d.i** = a kind of flag, an image of garud.a, basava, or other demi-god set upon a long post before a temple; cf. gud.i, temple (Ka.lex.)

got.i_ = a lump of silver (G.lex.)

kod., 'artisan's workshop'

kod.a, kor.a = a shell, a mite (Santali)

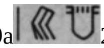
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

 (12)  (10) **Sign 86 (149)**
Glyph: a long linear stroke; got. = one (Santali) **kod.a** = in arithmetic, one (Santali) Rebus: **kod.a, kor.a** = shell (Santali) Together with pairing sign Sign 99 : *at.ar* a splinter; *at.aruka* to burst, crack, slit off, fly open; *at.arcca* splitting, a crack; *at.arttuka* to split, tear off, open (an oyster)(Ma.); *ad.aruni* to crack (Tu.)(DEDR 66) the epigraph of Signs 86 and 99 may be read as: shell, native metal (**kod.a aduru**).

go_ti = a woman (Te.lex.); *ko_tai* woman (beautiful as a garland)(Ta.)(DEDR 2214).

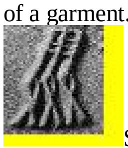
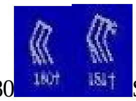
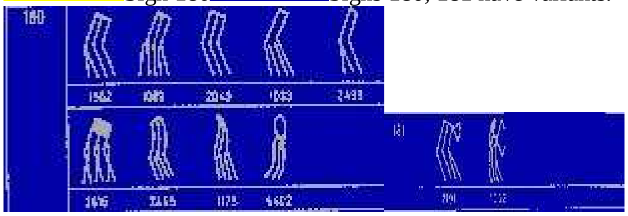
*got.i_* a clot of blood (G.)

got.imad.um a somersault; a leap heels over head (G.)

m0009a2616 The third sign from right is a long linear stroke: **|**

Warp-pegs **kor.i** = pegs in the ground in two rooms on which the thread is passed back and forth in preparing the warp (S.)

Cloak, trefoil glyph: **got.a_** a garment with clusters of flowers woven in it; *got.a_kor* [+ *kor* a border] a border of a garment having clusters of flowers woven in it; got.iyum a piece of cloth made use of in making up a turban to give it a round shape (G.) *go_t.u* embroidery, lace (Tu.); *go~_t.u* an ornamental appendage to the border of a cloth, fringe, hem, edging (Te.); *got.* Hem of garment; *got.a_* edging of gold lace (H.)(DEDR 2201). **go_t.u** = an ornamental appendage to the border of a cloth, fringe, hem, edging (Te.); embroidery (Tu.) kont.l.= pocket in outside edge of cloak (Ko.); got. = hem of garment (M.); got.a_ = edging of gold lace (H.) **got.** hem of a garment, metal wristlet (M.); **got.t.a_** gold or silver lace (P.)(CDIAL 4271).

ko_t.u = line (Ta.) **kod.a** = 4 **gan.d.a**. kod.a = one in arithmetic. **got.a** = numerative particle (Mth.) *kot.i_* the largest bead in a rosary from which the counting begins (G.)
Fish signs (and variants) seem to be differentiated from, perhaps a loop of threads formed on a loom or loose fringes of a garment. This may be seen from the seal M-9 which contains the sign:
Sign 180Signs 180, 181 have variants.

Edging, trimming (cf. orthography of glyph in the middle of the epigraph)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

erka, era, 'copper'

eru_ = copper (?), bronze [eru_ = engrave, carve]; **urudu_** = bronze (Akkadian) **hurru** (CAD) = mined copper (Akkadian) **urru, u_ru** = heap, mountain (Akkadian/Assyrian) **eruvai** = copper (Ta.); **ere -** a dark-red colour (Ka.)(DEDR 817). Cf. Akkadian/Assyrian **eru_** = copper (?), bronze [eru_ = engrave, carve] **eraka, er-aka** any metal infusion (Ka.Tu.); urukku (Ta.); urukka melting; urukku what is melted; fused metal (Ma.); urukku to melt (Ta.Ma.); eragu to melt (Tu.); eraka molten state, fusion; erakaddu any cast thing; eraka hoyi to pour melted metal into a mould, to cast; erako_lu the iron axle of a carriage (Ka.); er-e to pour any liquids; to pour (Ka.); to cast as metal (Ka.) erande sp. fruit, red in colour (Ka.); re_cu, re_cu-kukka a sort of ounce or lynx said to climb trees and to destroy tigers; a hound or wild dog (Te.)(DEDR 817). re_-gad.a, re_-gad.i clay (Te.)(DEDR 820). **erkem** = billhook (Go.)(DEDR 824)

eraka, era, era = syn. **erka**, copper, weapons (Ka.) **erako_lu** = the iron axle of a carriage (Ka.M.); cf. irasu (Ka.lex.) **erako** molten cast (Tu.lex.) **eh-kam** any weapon made of steel (**Cu_t.a_.**); **eh-ku** steel; **eh-ku-pat.utal** to melt, to soften (**Cilap. 15, 210, Urai.**)(Ta.lex.)

he_rka pl. plough; pair of ploughing bullocks (Kuwi)(DEDR 2816). e_r-c-ci_r implements of husbandry; wealth produced by husbandry (W.)(Ta.lex.) si(h)a_ra_ drill (for sowing seed)(L.); sia_ra furrow (Or.)(CDIAL 13429). xir furrow, one ploughing; xirlu_ furrow; xirluwa_ furrowed (A.); si_r ploughing (H.); siru-va, siri plough; (h)ira, (h)iri- line, streak (Si.)(CDIAL 13441).

kere to prepare charcoal, to carry out the process by which charcoal is made (Santali.lex.) here, ere black grease for wheels (Ka.); heregombu a horn or hollow piece of bamboo in which such grease is kept (Ka.) (Ka.lex.) ere a dark-red or dark-brown colour, a dark or dusky colour (Ka.); er-e, er-upu (Te.); eruvai blood, copper (Ta.); irumpu iron (Ta.); inumu (Te.); irul. the colour black (Ta.); ere black grease for wheels; soil of a dark colour, black soil (Ka.)(Ka.lex.)

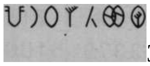
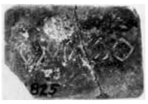
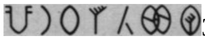
kamat.ha_yo ‘smith’ (G.O); *lo* ‘iron’; [**kamat.ha_yo** ‘a learned carpenter or mason working on scientific principles’ (G.)] *ka_ma_t.i_* [komat.i_ (M.)] a caste of hindus who are generally palanquin bearers and labourers (G.); *ka_m* work (G.) **kamat.ha_n.a** [cf. karma, ka_m, business + stha_na, tha_n.am, a place fr. Skt. stha_ to stand] arrangement of one’s business; putting into order or managing one’s business (G.lex.) **kaba_lo** (Ar. keba_lah cf. Hem. Des’. **kabba_lam** = Skt. karma-stha_nam, karma_layam, a place of work or business, fr. karma work + a_laya, a house] a title-deed; a deed of sale or purchase; kabilo [Ar. keba_lah] a family; a household (G.lex.) **kampat.t.am** 'mint' (Ta.); **kamat.amu, kamat.amu**= gold furnace (Te.)

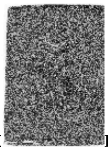
Glyphs: erako (nave) + **khut.i** (pin) + lo kamat.ha (ficus leaf) = Rebus: **erako** ‘molten cast’ + **khut.i** ‘furnace’ + lo kamat.ha ‘metal mint: **kammat.a**’ [**khut.i** Nag. (Or. **khut.i_**) diminutive of **khun.t.a**, a peg driven into the ground, as for tying a goat (Mundari.lex.) **khu~t.i_** wooden pin (M.)(CDIAL 3893)]

Alternative**: tamire** = the pin in the middle of a yoke (Te.)
Rebus: **tavara** = tin (Te.Ka.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Archer, fig leaf

m0582At m0582Bt  3358  m0587At m0587Bt
 3365 Horned Archer?

m0588At  m0588Bt Horned archer.

m1540Act m1540

Allographs of a leaf sign, ligature with crab sign [After Parpola, 1994, fig. 13.15]

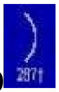
The archer shown on one copper tablet seems to be a synonym of the leaves ligatured with crab on another copper tablet since the inscription on the obverse of each of the tablets is identical. [cf. Parpola, 1994, fig. 13.13] This ligatured sign appears on two seals- one from Harappa and another from Lothal. Leaves ligatured with crab is a sign which occurs on these seals and with similar sign sequences. [cf. Parpola, 1994, fig. 13.12]

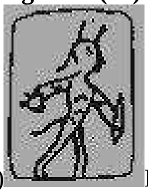
The language in which such a synonym can be found is mleccha! Proto-Bharatiya language!

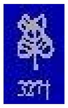
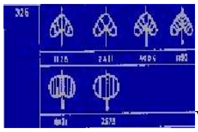
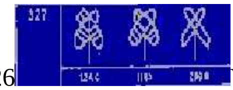
kamar.kom = fig leaf (Santali.lex.) **kamarmar.a_** (Has.), **kamar.kom** (Nag.); the petiole or stalk of a leaf (Mundari.lex.)

kama_t.hiyo = archer; **ka_mat.hum** = a bow; ka_mad.i_, ka_mad.um = a chip of bamboo (G.) **ka_mat.hiyo** a bowman; an archer (Skt.lex.)
Glyph: *kamat.hi_, ka_mat.hum* a bow (G.); *kamat.ha* a tortoise, a bamboo (Skt.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

(37) **Sign 287 (88)**

Copper tablets (15)Field Symbol 52 (6)

 V326V327

lo = nine (Santali) [Note the count of nine fig leaves on m0296]
loa = a species of fig tree, ficus glomerata, the fruit of ficus glomerata (Santali.lex.)

loha lut.i = iron utensils and implements (Santali.lex.)

lauha = made of copper or iron (Gr.S'r.); metal, iron (Skt.); lo_haka_ra = coppersmith, ironsmith (Pali); lo_ha_ra = blacksmith (Pt.); lohal.a (Or.); lo_ha = metal, esp. copper or bronze (Pali); copper (VS.); loho, lo_ = metal, ore, iron (Si.)

Old Akkadian illustration on a cylinder seal

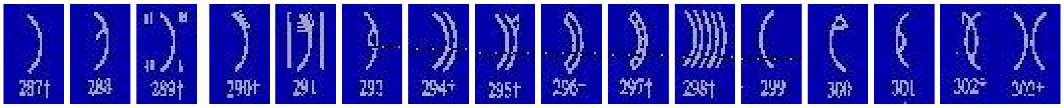
Another rosetta stone is MS 2645 cylinder seal found in NW Afghanistan (Kalenao near the Turkmeni frontier) showing Old Akkadian glyphs together with an epigraph of the civilization with four signs:

MS 2645 Sarasvati-Sindhu valley script, and old akkadian illustration. North West Afghanistan, ca. 21st cent. BCE
Name of owner or scribe?
This seal links Indus Valley and Old Akkadian civilizations. The seal is of blue stone, North West Afghanistan, ca. 23rd-21st c. BC, 1 cylinder seal, 3,9x2,7 cm, 5 Indus valley signs, illustration standing archer aiming his bow at a falling boar, in the style of the best Old Akkadian art in Sumer.
Provenance: 1. Bronze age site, Kalenao near the Turkmeni frontier, North West Afghanistan.
Commentary: While numerous Indus Valley stamp seals are known (cf. MS 2394), this is the only known cylinder seal (MS 2645) with the hitherto undeciphered Indus Valley script. Furthermore, this is the only known document linking together over land two of the great civilisations of the Old Akkadian period in Mesopotamia and the Indus Valley. Sea-borne trade has been known for a long time, and documented in practical terms by the Norwegian explorer and scientist, Thor Heyerdahl, in his expedition with the reed boat, Tigris, in 1977.
MS 2814, a copy of a Sargonic royal inscription mentioning the defeat of *Melukham*, the Indus Valley civilisation.
Exhibited: The Metropolitan Museum of Art, New York, from October 1999.

(10) **Sign 28 (50)**

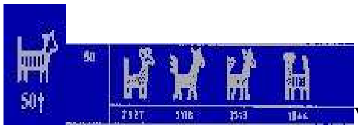
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Ligature on sign 28: dhanus ‘bow’ (Skt.) dhan.i_ = the owner, the possessor (G.)

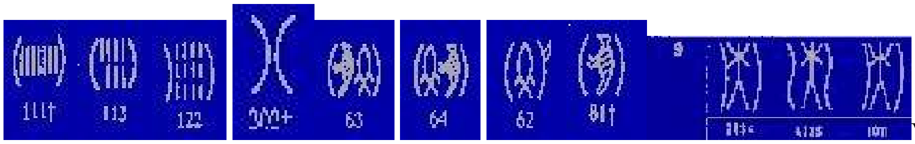
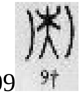

Sign 287: **kut.ila** = bent, crooked (Skt.) kut.ila (Skt. Rasaratna samuccaya, 5.205) Humpbacked kud.illa (Pkt.)

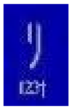
Rebus: **kut.ila, katthi_l** = bronze (8 parts copper and 2 parts tin) [cf. a_ra-ku_t.a, ‘brass’ (Skt.)]

( ) The glyph of a curved line when mirrored becomes a ligature, an enclosure to other glyphs.

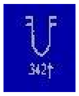

V050 **kutru, kutu** = a dog, a puppy (Santali.lex.)

kut.i = a nosegay (Ka.lex.) gun.d.ri = a quail (Santali.lex.) gun.d.agi = waterfowl (Te.lex.) kut.is = white-throated munis, *uroloncha malabarica* (Santali.lex.) gund.ral = a kind of quail (Go.)(DEDR 1696).Rebus: **kut.hi** = furnace


V009


 (54) **Sign 293 (136)** h172B Field Symbol 36 (12)
Hare. Field symbol 16 (10)

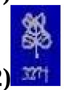
(28) **Sign 294 (53)**

 (32) **Sign 296 (35)**

(8) **Sign 307 (69)**

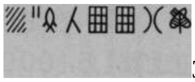
Glyph: **ka_mat.hum** = a bow; ka_mad.i_, ka_mad.um = a chip of bamboo (G.)
Rebus: kammat.amu = gold furnace (Te.)

(18) **Sign 326 (35)** Copper tablets (6)

(16) **Sign 327 (42)** 

loa = *ficus glomerata* (Santali) Rebus: loha = iron, metal (Santali)
kamar.kom = fig leaf (Santali.lex.) **kamarmar.a_** (Has.), **kamar.kom** (Nag.); the petiole or stalk of a leaf (Mundari.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

m0451At m0451Bt3235

kamat.ha 'ficus'; *lo* 'ficus glomerata'

eru_, aru = eagle (Akkadian/Assyrian) **eruvai** = a kind of kite whose head is white and whose body is brown; eagle (Ta.); **eruva** = eagle, kite (Ma.)(DEDR 819).

Since the eagle is ligatured with a tiger on a Bluchistan potsherd, it is likely that the eagle is connoted by *eruvai*; rebus: copper + tiger '*kul*' rebus: *kol* alloy of five metals + na_ga 'snake'; rebus: na_ga 'lead' (Skt.) The ficus is **kamat.ha**; rebus: **kamat.amu, kammat.amu** = a portable furnace for melting precious metals (Te.) The fish are **bed.a hako** (Santali); rebus: bed.a = either end of a hearth (G.)

Griffin, Baluchistan (Provenance unknown); ficus leaves, tiger, with a wing[7], ligatured to an eagle.

Lentoid seal with a griffin, ca. 1450–1400 B.C.; Late Minoan II Minoan; Greece, Crete Agate; H. 1 1/16 in. (2.7 cm), W. 1 1/16 (2.7 cm), Diam. 1/2 in. (1.2 cm) It is engraved with an image of a crouching griffin, a powerful mythical creature with the head and wings of a bird and the body of a lion. http://www.metmuseum.org

aru_ = lion (As god of devastation, Nergal is called A-ri-a) (Akkadian)

---

[7] **aba_ru** = lead; antimony (**annaku** is most unlikely to be lead rather than tin).(cf. CAD A (II): 126; AHw 49) (Akkadian/Assyrian).
abru = wing (Akkadian/Assyrian)
abaru = enclose, surround; aburru = enclosure (Akkadian/Assyrian)
abaru = be strong, powerful; strength, power (Akkadian/Assyrian)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

3255; Louvre Museum; Luristan; light yellow stone; seal impression; one side shows four eagles; the eagles hold snakes in their beaks; at the center is a human figure with outstretched limbs; obverse of the seal shows an animal, perhaps a hyena or boar striding across the field, with a smaller animal of the same type depicted above it.

The depiction of eagle on Luristan seal is comparable to the seal found in **Harappa, Vats 1940, II: Pl. XCI.255.**

BMAC Compartment seal; double-headed eagles.[8]

Taxila, temple of the double-headed eagle. The sculpted double-headed eagle may be seen on top of the niche/door on the left.

883-59 BCE Mesopotamian, Neo-Assyrian; Limestone; height 1 m (39 3/8 in.);47.181 Detroit Institute of Arts, USA.

An eagle-headed, winged divinity stands facing a tree of life (the ends of the branches are just visible at the right edge). The figure was a small section of the wall decoration in the state apartments of the royal palace at Nimrud in northern Iraq, built by Assurnasirpal II, King of Assyria. The deity holds a bucket in one hand and in the other a spathe (leaflike sheath for the flowers) of the date palm.

http://www.dia.org/collections/ancient/mesopotamia/47.181.html

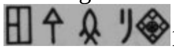
[8] *ke~he* a kite; *arak ke~he* the male kite (Santali) *arak* 'red, scarlet' (Santali) *arakku* resin melted with turpentine, lac (Ta.); gumlac (Ma.); *alakta(ka)* (Skt.)(DEDR 199).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Duplicated and paired glyphs

A characteristic feature of use of glyphs to compose epigraphs is the duplication of glyphs or pairing of the same glyph. Some examples are:

Duplicated and paired one-horned heifer
Duplicated and paired shor-horned bull
Duplicated and paired antelope looking back
Duplicated and paired scorpions
Duplicated and paired fishes
Duplicated and paired bangles (or millstone)

m0296 Two heads of one-horned bulls with neck-rings, joined end to end (to a standard device with two rings coming out of the top part?), under a stylized tree with **nine leaves**. 1387

kamat.ha ‘ficus religiosa’; rebus: **kampat.amu** ‘furnace’.

Substantive: *lo* ‘iron’ (Assamese, Bengali); *loa* ‘iron’ (Gypsy) Glyph: **lo** = nine (Santali); **no** = nine (B.) [Note the count of nine ‘ficus’ leaves depicted on the epigraph.]

damad.i, dammad.i = a ka_su, the fourth part of a dud.d.u or paisa (Ka.M.); damad.i_ (H.) damr.i, dambr.i = one eighth of a pice (Santali) dammid.i = pice (Te.)

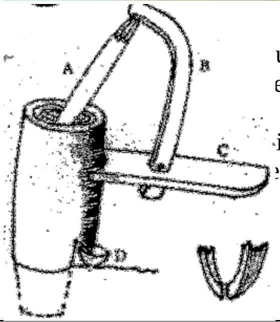
Grapheme: damad.i, dammad.i = a small tambourine with gejjes (Ka.)
Grapheme: **damr.a** m. a steer; a heifer; damkom = a bull calf (Santali)

Rebus: **damha** = a fireplace; dumhe = to heap, to collect together (Santali)

m440AC Two short-horned bulls facing each other on the top register.
Rebus: **samanom** = gold (Santali) Glyph: **samna samni** = face to face (Santali)
Rebus: **hom** = gold (Ka.); **soma** = electrum (RV) Glyph: **homa** = bison (Pengo)

kuduru = lizard (Santali) Rebus: **kuduru** = portable furnace for gold (Te.)

badhia = castrated boar (Santali) Rebus: **bar.ae** = blacksmith (Ash.)



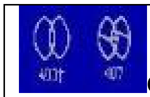
us: **ib** = iron (Santali)
ebus: **t.agromi** = tin (Kuwi)

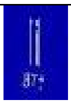
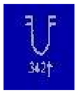
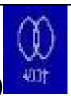
i.lex.) gar.i = the macaque, macacus sinicus, a long-tailed monkey; smaller (Mundari.lex.)

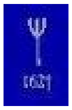
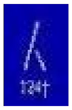
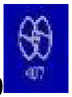
ga~r.i (Has.); syn. of **kulhu** (Nag.); an oil-press; trs. To shape into an oil-press; **gar.i-o** = to be shaped into an oil press (Mundari.lex.) ga~r.i =

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

oil press. A. end of pestle crushing into the hollowed tree trunk; B. komcon, curved piece; C. keoar, plank serving as a handle; D. ground level[After Pl. XV, 2, *Encyclopaedia Mundarica*] **ga~r.i** = oil-press (Santali)

Glyph**: cur.i** a bracelet, a bangle (Santali)
Glyph: millstone: **san:ghat.i** = a millstone, that crushes (Ka.)
Rebus: **cu_l.ai**, 'kiln' (Ta.) **culli** = a fireplace (Ka.)
Rebus: **saghad.i_** = furnace (G.)

 (34)  (21) **Sign 403 (93)**

 (10)  (17) **Sign 407 (48)**

(26)

The pairing can be explained by a lexeme: san:gad.a = two; san:gad.am double-canoe (Ta.); jan:gala (Tu.); **san:gala** pair; han:gula, an:gula double canoe, raft (Si.)(CDIAL 12859).

Rebus: **san:gha_d.o, saghad.i_ (G.)** = firepan; **saghad.i_, s'aghad.i** = a pot for holding fire (G.)[cula_ sagad.i_ portable hearth (G.)]

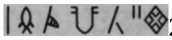
Thus, the pairing or duplicating a glyph is a way of connoting a **saghad.i_** 'a portable hearth' (G.)

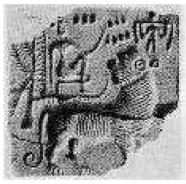
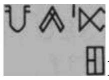
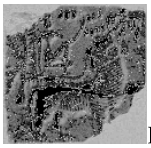
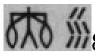
Each of the paired glyphs can be explained as a hearth, **saghad.i** for (1) copper; (2) native metal; (3) tin alloy; (4) axe; and (5) bangle:

Rebus: **damr.i** = copper; **tamb(r)a** = copper (Skt.); **tamba** = copper (Santali) Glyph: one-horned bull **damr.a** 'steer, heifer'
Rebus: **aduru** = native metal (Ka.) Glyph: **ad.ar** = bull (Santali)
Rebus: **t.agromi** = tin metal alloy (Kuwi) Glyph: **tagara** = antelope, ram (Skt.) [Looking back: **krammarincu** (Te.) Rebus: **kamar** = blacksmith (Santali)]
Rebus: kanca, kancu = bell metal (Ka.); kan~ca = id. (Ta.); kamsa = id. (Ka.) **kanca_** = a marble (made of stone or lac)(Ka.) Glyph: **kaca kupi** = scorpion (Kuwi) kaccu = biting, a bite (Ka.)
Rebus **hako** = axe (Santali); **bed.a** = hearth (G.) Glyph: **bed.a hako** = fish (Santali)
Rebus **culli** = furnace, kiln (Ka.) Glyph: **cur.i** = bangle (Santali)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Person (woman) seated on a tree branch, a spy, eraka

m0309 Pict-109: Person with hair-bun seated on a tree branch; a tiger looks at the person with its head turned backwards. 2522
Glyph: *sal* a gregarious forest tree, *shorea robusta*; *kambra* a kind of tree (Santali)
Substantive: *sal* workshop (Santali)

k049  m0310AC 1355 Kalibangan049
8013

h163 h181A h181B Planoconvex molded tablet found on Mound ET. A. Reverse. a female deity battling two tigers and standing above an elephant and below a six-spoked wheel; b. Obverse. A person spearing with a barbed spear a buffalo in front of a seated horned deity wearing bangles and with a plumed headdress. The person presses his foot down the buffalo's head. An alligator with a narrow snout is on the top register.

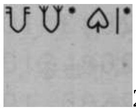
Chanhudaro27 m1185 m0488At [One side of a three-sided tablet] Note the glyph showing a person seated on the branch of a tree on m0488At and on m1431A.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

m1431B

m1431C

m1431E

m1431A

2805

m1431: Row of animals in file (a one-horned bull, an elephant and a rhinoceros from right); a gharial (or lizard) with a fish held in its jaw above the animals; a bird (?) at right. Pict-116: From R.—a person holding a vessel; a woman with a platter (?); a kneeling person with a staff in his hands facing the woman; a goat with its forelegs on a platform under a tree. [Or, two antelopes flanking a tree on a platform, with one antelope looking backwards?]

The tradition of working with **kol**, an alloy of five metals is exemplified by the use of the term, **pan~camas'a_le** (lit. five metals workshop) to connote a brazier's shop; it is also exemplified by the name assigned to the entire region on the upper reaches of banks of River Sarasvati as **pa_n~ca_la** and the use of the term **pan~ca_l.a** to connote five artisans:

pan~ca_l.a, pa_n~ca_la (pan~caka_ruka) = the five classes or caste of artificers: goldsmiths, carpenters, blacksmiths, braziers, and stone-cutters (Ka.M.); the first three classes; a goldsmith (Ka.) pa_n~ca_l.a = an association of five guilds, viz. those of the carpenter, weaver, barber, washerman, and shoemaker (Skt.); or, those of the carpenter, brazier, ironsmith, goldsmith, and stone-mason (Ka.) **pan~camas'a_le** = a brazier's shop; **pan~camas'a_leyava** = a brazier (Ka.) **pan~ca_n.amu** = handicraft, handcraft, manual occupation; a workshop; pan~ca_n.udu = an artisan, a mechanic, a handicraftsman (Te.) pan~cama = dexterous, clever (Ka.)

har401Harappa 1993: H93-2093/4093-1: terracotta 'mask'; tiger's maw, human eyes and possibly mustache and bovine

pa_n~ca_lika = a doll, a puppet, an image carved on pillars (Te.) pa_n~ca_like, pa~n~ca_la = a doll, a puppet; pa_n~ca_lika_ni_ka = an image, *pratime* (Ka.)

A glyph which explains the substantive, 'copper' is a glyph denoting the nave of a spoked-wheel: era, er-a = **eraka** = ?nave [this is a reasonable, semantic deduction since the compound erako_lu connotes the iron axe of a carriage]

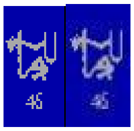
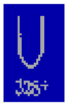
eraka, hero = a messenger; a spy (G.lex.) he_raka = spy (Skt.); e_ra = to spy (Kui); er = to see (Malt.); he_ru = spy (Pkt.); he_riu = spy (Kl.); hero (G.); heru~ spying (G.); hern.e~ to spy (M.); herna_ (H.); herai (Oaw.)(CDIAL 14165). heriya_m = prying, peeping; heravum = to spy (G.lex.) **ere** = to see, behold; erye to peep, spy (Malt.); **her** to look at or for (Pkt.); **er uk-** to play 'peeping tom' (Ko.); **e_ra** spying, scouting (Kui); he_ri kiyali to see (Kuwi); e_rna_ (i_ryas) to see, look, lok for (Kur.)(DEDR 903).

era = female, applied to women only, and generally as a mark of respect; era iri = to be at enmity with each other (Santali.lex.) gosa~e **era** = the godess of the Sal grove; gosa~e = the general name given to bon:gas;

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

teben in gosa~e kana = I am engaged in sacrificing today (Santali.lex.) er-r-apo_tamma = the name of a village godess supposed to cure diseases among cattle (Te.lex.)

m0478Bt **erga** = act of clearing jungle (Kui) [Note image showing two men carrying uprooted trees].

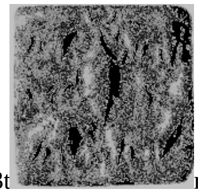



Signs 45/46 (seated person) seem to ligature the pictorial of a kneeling-adorant with sign 328 **erugu** = to bow, to salute or make obeisance (Te.) **er-agu** = obeisance (Ka.), ir_ai (Ta.)

m0439t

m440AC

m1393t


m1394t

m0441At

m0441Bt

m1395At

m1395Bt Multiple heads of tigers joined/interlocked to a tiger's body in m1395At and m0441At [The motifs on m 439, m440 and m1393 to m1395 seem to be identical; on one side three or more (perhaps five) tiger heads emanating from a body are shown; on another side a group of animals surrounding a lizard (gharial): two short-horned bulls facing each other, a rhinoceros, an elephant, a tiger looking back and a monkey (?) with face turned backwards.]

kuduru = a goldsmith's portable furnace; **kudul.l.u** (pl.) (Te.lex.) *kudru* top of fireplace (Kuwi)(DEDR 1709).

kudur d.okka = a kind of lizard (Pa.); kudur d.okke, kudur d.ekke = garden lizard; kidri d.okke house lizard (Go.)(DEDR 1712). **d.okke** = lizard (Kol.); d.okka (Pa.); d.okod. (Ga.); dokke garden lizard; d.oke lizard; dokke_ small lizard; pidri_ dokke_ the house-lizard; d.ogga_l chameleon (Go.); d.o_ki lizard (Kond.a); d.oi chameleon (Kui); d.rui'i lizard (Kuwi); droi, d.orgi, d.rogi chameleon; d.ro_gi lizard (Kuwi); tuska (Kur.)(DEDR 2977). [Note the glyphs of what is often called the gharial or alligator; could it be the common house lizard?]

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

m1187 **kudur** ‘a wall’ (Ka.)

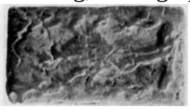
dhokra dom = a section of the semi-hinduised caste of **doms**; **dhokra** could connote craftsmen or metal workers (Santali.lex.)

dokr.a = a (copper) coin of the value of one fourth of a pice (Santali.lex.) **dokd.o** = a half pice; a measure of value, being one hundredth part of a rupee (G.)
dokhol to occupy, or be in possession; occupancy, possession (Santali)

dohr.a ‘to double, to do a second time or over again’; *bar dohr.ale pokeda* ‘we hoed it twice after the first time’; *kami dohr.aepe* ‘do the work over again’ *don.n.i* ‘two’ (Ap.); dat. *don* (K.); *don* (M.); do_ni (Konkan.i) *d.oht.a* ‘having two houses in different places; a town and country residence; *nui doe d.oht.a akata* he has built himself another house in a different village (and has now two houses) (Santali).

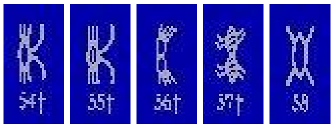
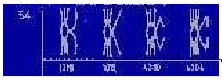
d.on:kan.i, d.on:kal.i, d.hon:kan.i = a spear, a lance (Ka.); don:kane id. (Te.)

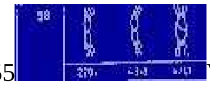
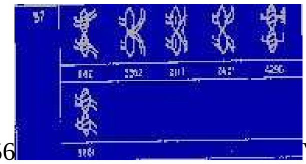
d.oge, doge = to make a hole, to excavate a hole (Ka.); do_ku to dig slightly so as to loosen the soil for weeding, cutting up the turf; do_kud.uba_r-a = a turf-spade (Te.)



h172B The over-arching glyph is that of a lizard. The glyph is sometimes shown catching the scale of a fish. a~s **= scale of fish (Santali); rebus: ayas ‘metal’ (Skt.) bed.a = either opening of a hearth (G.); bed.a hako = a type of fish (Santali) cf. assem ‘electrum’ (Old Egyptian) cf. kamsala = of the goldsmith’s caste; kamsamu = bell-metal; kamsalava_d.u = a goldsmith, a silversmith, a jeweler working in gold, silver and gems; kamsa_lava_d.u, kamsa_li = kamsa (Te.) ams’u = filament of soma (S’Br.); amsu thread (Pali); amsu sunbeam (Pkt.)(CDIAL 4) hasli_ = gold or silver collar (P.); hasu = silver collar (S.)(CDIAL 6).**

kan:gar ‘portable furnace (K.) **kan:g** portable brazier (B.)

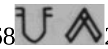
 V054

V055 V056 V057

Spider **kan:gara_** (Tir.) gan:ges. (Ash.)

kha~_g (H.) kha_g (B.H.Ku.N.); **khagga** = rhinoceros (Pkt.)

kakr.a ‘common lizard’; *kakr.a hako* a species of fish (Santali)

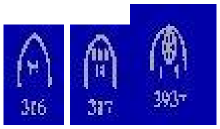
m11682360 Tiger with long (zebu’s) horns?

kollan-ulai-k-**ku_t.am** blacksmith's workshop, smithy; Text 2360: lid: dakhna; rebus: d.a_kin.i_, ‘sword’; rim of jar: kan.d. kanka, ‘gold furnace’.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

ku_t.am ‘horns’; **ku_t.am** ‘workshop’

kumpat.i = chafing dish (Te.)



gummat.a cupola, dome (Ka.)

Glyph of disheveled hair may be connoted by the phrase: **salae sapae** = untangled, combed out, hair hanging loose (Santali.lex.)

Rebus: **sa_la** = workshop (B.) **sapap** = arms, tools, implements, instruments, gear; sendra reak sapap = gear for hunting; raj mistri reak sapap = the tools of a mason; kurta rorok reak sapap = the tools with which to sew a coat (Santali)

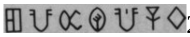
sal = wedge joining the parts of a solid cart wheel (Santali.lex.) sa_l = a joint that fits a socket; sa_lvi_ a maker of joints, a carpenter (G.lex.) s’al.i_ [Skt. s’ala_ka_] a chip; a covert term for a quarter of a rupee, used by merchants in secret conversation (so called because a quarter of a rupee is represented by (i) in writing which resembles a s’al.i_ or chip (G.lex.) sal mon:garu = a very large and heavy mallet used to hammer together the three parts of a saga_r.i wheel so as to drive in the dowels (sal) tightly (Mundari.lex.)

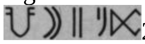
Association of woman glyph with tiger[13] glyphs:

kaidau = to subdue; rebus: **kaida** = a kind of knife with a curved blade; a big thick sickle, used to pollard trees or to cut branches (Santali)

A woman is subduing two tigers. **kola_** 'woman' (Nahali) is a phonetic determinant, a re-inforcement of the semantics of **kol** 'tiger': rebus: **kol** 'metal of five alloys, pan~caloha' (Ta.) The pair of tigers is connoted by the lexeme: san:gad.a 'two, pair'; rebus: san:gada 'furnace'. Thus the owner of the inscribed objects possesses a furnace **– san:gad.a** -- for alloying five metals, **kol**

m1183a

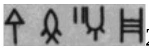
m0306 Person grapwipling th two tigers standing on either side of him and rearing on their hindlegs.

2086

m0307 Person grappling with two tigers standing on either side of him and rearing on their hindlegs.

2122 *bar* ‘two’; *bhar* ‘oven’; *kul* ‘tiger’; *kol* ‘smithy’ **kol** metal (Ta.) **kol** = pan~calo_kam (five metals) (Ta.lex.) Rebus: **kola** = woman (Nahali) a_r = six (Ka.) [six locks of hair] Rebus: ara, era = copper (Ka.) bhat.a = six (G.); rebus: bhat.a = furnace (Santali)

Six locks on the **cu_d.a** 'diadem, hairdress' of the woman can be read as a hieroglyph: **pota** 'six'; pot 'bead'; thus **pot + cu_d.a** = bead workshop. Together with kol 'tiger, woman'; rebus: *kol* 'metal of five alloys, *pan~caloha'* the glyph connotes: metal bead workshop.

pota adj. ‘six’ (used in secret conversation by merchants)(G.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

m0308AC Pict-105: Person grappling with two tigers standing on either side of him and rearing on their hindlegs. 2075 [The third sign from left may be a stylized 'standard device'?]

ko_l = woman, wife (Nahali); ko_l-na kupra = the wife's cloth (Nahali); ko_lama wife (Ko.); **kolay** wife (K.); kulis wife (Ta.Burgandi dialect); khulis'i_ id. (Yerukala); khulsa_ husband (Malar); kola = bride, son's (younger brother's) wife (Kui)

kola, kolum = a jackal (G.) **kolhuyo** (Dh.Des.); **kulho, kolhuo** (Hem.Des.); **kros.t.r.** (Skt.) kul seren = the tiger's son, a species of lizard (Santali) **kolo**, kolea_ jackal (Kon.lex.) <u>Jackal</u>: kur..i-nari jackal (Kur-r-a_. Tala. Ve_t.an-valam. 13)(Ta.); id. (Ma.)(Ta.lex.) kul tiger; kul dander den of tiger; an.d.kul to become tiger; hudur. to growl as tiger; maran. d.at.kap kul a big-headed tiger (Santali.lex.) ko_lupuli = a big, huge tiger, royal or Bengal tiger; ko_lu = big, great, huge (Te.lex.) kula tiger; syn. of maran: kula, burukula, kamsikula, the striped royal tiger; syn. of maran: kula, lar.okula, the brown royal tiger without stripes; syn. of hur.in: kula, soncita, leopard: sin:kula = the lion; kindorkula, kinduakula = the panther; tagukula (lit. the shaggy tiger), the hyena; d.urkula, a smaller feline animal, which when attacking a man bites him in the knee, probably a tiger-cat; kula-bin: collective noun for all dangerous animals; kulabin:-o to become infested by dangerous animals; kla (Khasi.Rongao) tiger (Mundari.lex.) kros.t.r. = jackal (RV.); kro_s.t.u = id. (Pa_.n.); kro_s.t.r. = crying (BhP.); kot.t.hu, kot.t.huka, kotthu, kotthuka = jacka (Pali); kot.t.hu (Pkt.); kot.a (Si.); kot.iya = leopard (Si.); ko_lhuya, kulha = jackal (Pkt.); kolha_, kola_ jackal; adj. crafty (H.); kohlu~, kohlu_ jackal (G.); kolha_, kola_ (M.)(CDIAL 3615). Fr. krus' = cry, call; kro_s'ati cries out (RV)(CDIAL 3613). Kot.ho = a call, a messenger; kot.ha invitation; kot.han.u = to send for (S.)(CDIAL 3614). Kos' to abuse, curse, blame (Gypsy); kosna_ to curse (H.); kosn.a_ (P.); akos' to abuse (Gypsy); kros'ati cries out (RV)(CDIAL 3612). kros'a shout (VS); kuru_ voice, word (Pas'); kosa_ curse (H.)(CDIAL 3611). **kul.** = the tiger, filis tigris; kul en:ga = tigress; *kul seren* 'the 'tiger's song', a species of lizard (Santali)

kola foetus (OMarw.)(CDIAL 3607). **kola** = foetus; **kor.o** bosom, breast (S.); kurouru breast (Dm.); kor.i_ breast of a quadruped (L.); koli_ chest of an animal (L.)(CDIAL 3607). kol breast, bosom; kaula_, kola_, kauli_ id., lap (H.); kro_d.a breast, bosom (AV.); ko_la breast, lap (Skt.prob. MIA.); kor.o bosom, breast (S.); kor.i_ breast (S.); kor.i_ breast of a quadruped (L.); kor.a lap (Or.); kor lap (Mth.); kora_ id. (Bhoj.); kor womb (H.); kol. lap (M.); ko_la breast, bosom (Pkt.); koli_ chest of an animal (L.); kol womb (Ku.); lap (B.); kol, kola_ lap, hip on which children are carried (A.); kol.a lap (Or.)(CDIAL 3607). kalalam < kalala thin membrane covering the foetus (Cu_ta. Ja_n-a. 10,9)(Ta.lex.)

ko_l. 'planet'; rebus: **kol** 'metal'

ko_lamu = a boat (Te.lex.) ko_l = a raft, a float (Ka.lex.) **kola** = boat (Skt.lex.)

ko_lamu = adornment (of a bride or an idol)(Te.lex.)

Substantive: **kol**, kal = a machine, any mechanical contrivance; a trap, the spring of a pigeon trap; kal jet.ha, kol jet.ha = the part of a pigeon trap on which the decoy bird sits (Santali.lex.)

kal = a snake (Santali.lex.) ka_hal.e snake (Ka.)

kolhe = a species of small black ant (Santali.lex.)

Glyph: *kolma hor.o* ' a variety of rice plant' (Santali.lex.)

<u>Image: foetus</u>: **kola** foetus (OMarw.)(CDIAL 3607). **kola** = foetus; **kor.o** bosom, breast (S.); kurouru breast (Dm.); kor.i_ breast of a quadruped (L.); koli_ chest of an animal (L.)(CDIAL 3607). kol breast, bosom; kaula_, kola_, kauli_ id., lap (H.); kro_d.a breast, bosom (AV.); ko_la breast, lap (Skt.prob. MIA.); kor.o bosom, breast (S.); kor.i_ breast (S.); kor.i_ breast of a quadruped (L.); kor.a lap (Or.); kor lap (Mth.); kora_ id. (Bhoj.); kor womb (H.); kol. lap (M.); ko_la breast, bosom (Pkt.); koli_ chest of an animal (L.); kol womb

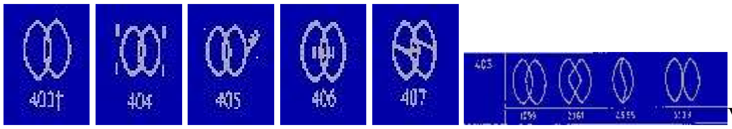
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

(Ku.); lap (B.); kol, kola_ lap, hip on which children are carried (A.); kol.a lap (Or.)(CDIAL 3607). kalalam < kalala thin membrane covering the foetus (Cu_ta. Ja_n-a. 10,9)(Ta.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

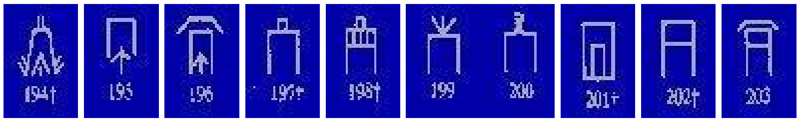
Portable stove of a goldsmith, ban:gala

ban:gala = kumpat.i = an:ga_ra s’akat.i_ = a chafing dish a portable stove
a goldsmith’s portable furnace (Te.lex.) cf. ban:garu ban:garamu = gold (Te.lex.)



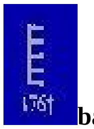
V403**ban:gad.i_** a bangle, a bracelet of glass, gold, or other material, worn on the wrist by women (G.lex.) bhagan.a = a bangle (IA 19)(IEG) **ban:gan** = bangle (cf. Ka_li_ban:gan, black bangle: name of a site on River Sarasvati banks)

bahula_ = Pleiades (Skt.) **bagal.a_** = name of a certain godess (Te.lex.) bagal.a_, bagal.e, vagala_ (Ka.); bakala_, bagal.a_, vagal.a_ (Te.); bagal.a_devi = one of the s’akti deities by means of which one may shut the mouth of an opponent, etc. (Ka.lex.) bakkula = a demon, uttering horrible cries, a form assumed by the Yakkha Ajakala_paka, tto terrify the Buddha (Pali.lex.) bahula_ pl. the Pleiades (VarBr.S.); bahulika_ pl. (Skt.); bahul (Kal.); ba_l, baul, balh (Kho.); bol, boul, bolh (Kho.); bale (Sh.)(CDIAL 9195). bahulegal. = the Pleiades or Kr.ittika_-s (Ka.lex.) **bahula_** (VarBr.S.); bahul (Kal.) six presiding female deities: vahula_ the six presiding female deities of the Pleiades (Skt.); va_kulai id. (Ta.)(Ta.lex.) 5719.Image: pleiades: bahulika_ pl. pleiades; bahula born under the pleiades; the pleiades (Skt.lex.) bahule, bahulegal. the pleiades or kr.ttika_s (Ka.)(Ka.lex.) Image: female deities of the pleiades: va_kulai < vahula_ the six presiding female deities of the Pleiades; va_kule_yan- < va_kule_ya Skanda (Ta.lex.) pa_kulam < ba_hula the month of Ka_rttikai = November-December; pa_kul.i full moon in the month of purat.t.a_ci (Vina_yakapu. 37,81)(Ta.lex.) ba_hule_ya Ka_rttike_ya, son of S'iva; ba_hula the month ka_rttika (Skt.Ka.)(Ka.lex.)



bha_gal.a = a gate in the wall of a town; the precincts of a village; bazaar (G.lex.)

bagalo = an Arabian merchant vessel (G.lex.) bagala = an Arab boat of a particular description (Ka.); bagala_ (M.); bagarige, bagarage = a kind of vessel (Ka.)(Ka.lex.)



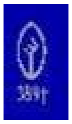
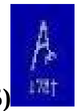
bakhor. = teeth of a comb (Santali.lex.)

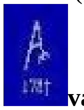
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Fire-pit, furnace, kulme

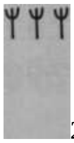
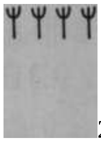
kolime, kolume, kulame, kulime, kulume, kulme fire-pit, furnace (Ka.); kolimi furnace (Te.); pit (Te.); **kolame** a very deep pit (Tu.); kulume kanda_ya a tax on blacksmiths (Ka.); **kol, kolla** a furnace (Ta.) *kole.l* smithy, temple in Kota village (Ko.); *kwala.l* Kota smithy (To.); *konimi* blacksmith; *kola* id. (Ka.); *kolle* blacksmith (Kod.); *kollusa_na_* to mend implements; *kolsta_na*, *kulsa_na_* to forge; *ko_lsta_na_* to repair (of plough-shares); *kolmi* smithy (Go.); *kolhali* to forge (Go.)(DEDR 2133).] **kolimi-titti** = bellows used for a furnace (Te.lex.) **kollu-** to neutralize metallic properties by oxidation (Ta.lex.) **kol** brass or iron bar nailed across a door or gate; kollu-t-tat.i-y-a_n.i large nail for studding doors or gates to add to their strength (Ta.lex.) **kollan--kamma_lai** < + karmas'a_la_, kollan--pat.t.arai, kollan-ulai-k-ku_t.am blacksmith's workshop, smithy (Ta.lex.) cf. ulai smith's forge or furnace (Na_lat.i, 298); ulai-k-kal.am smith's forge; ulai-k-kur-at.u smith's tongs; ulai-t-turutti smith's bellows; ulai-y-a_n.i-k-ko_l smith's poker, beak-iron (Ta.lex.) [**kollulaive_r-kan.alla_r: nait.ata. na_t.t.up.); mitiyulaikkollan- mur-iot.ir.r.an-n-a: perumpa_**)(Ta.lex.) Temple; smithy: kol-l-ulai blacksmith's forge (kollulaik ku_t.attin-a_l : Kumara. Pira. Ni_tiner-i. 14)(Ta.lex.) cf. kolhua_r sugarcane milkl and boiling house (Bi.); kolha_r oil factory (P.)(CDIAL 3537). *kulhu* ‘a hindu caste, mostly oilmen’ (Santali) kolsa_r = sugarcane mill and boiling house (Bi.)(CDIAL 3538).

kola_ burning charcoal (L.P.); ko_ila_ burning charcoal (L.P.N.); id. (Or.H.Mth.), kolla burning charcoal (Pkt.); koilo dead coal (S.); kwelo charcoal (Ku.); kayala_ charcoal (B.); koela_ id. (Bi.); koilo (Marw.); koyalo (G.)(CDIAL 3484). < Proto-Munda. ko(y)ila = kuila black (Santali): all NIA forms may rest on ko_illa.] koela, kuila charcoal; khaura to become charcoal; ker.e to prepare charcoal (Santali.lex.)

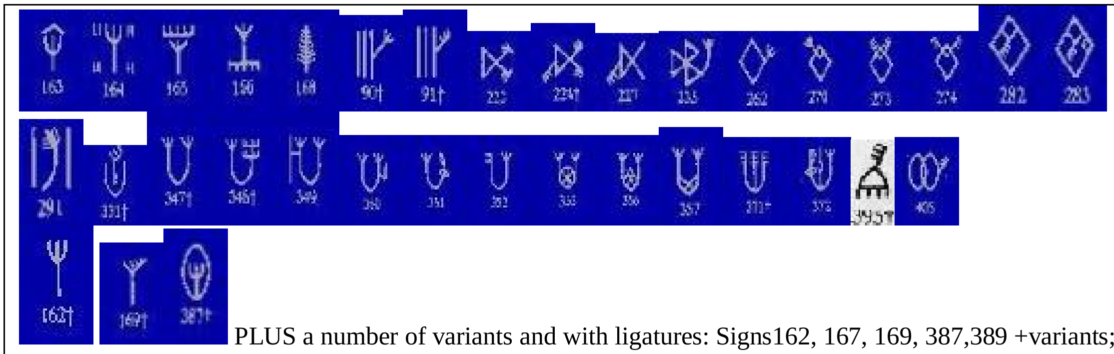
 (29) **Sign 178 (35)** ‘Tree’ Field symbol 44 (6)

**va_holo** = adze; vahola_ = mattock; bahola_ = a kind of adze (P.lex.)
Rebus: **ban:gala** = kumpat.i = an:ga_ra s’akat.i_ = a chafing dish, a portable stove, a goldsmith’s portable furnace (Te.lex.) cf. ban:garu, ban:garamu = gold (Te.lex.)

Grapheme: **ko_lemu** = the backbone (Te.**)**

2949 Dotted circles 2950 Rojdi

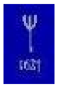
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



PLUS a number of variants and with ligatures: Signs162, 167, 169, 387,389 +variants; Ligatures: Signs163, 166-6, 168, 90, 91,223,224,227,235.262,270,273,274, 282,283,291,331, 347-352, 355-357,371,372, 388-390,395,405

kolom = cutting, graft; to graft, engraft, prune; kolom dare kana = it is a grafted tree; kolom ul = grafted mango; kolom gocena = the cutting has died; kolom kat.hi hor.o = a certain variety of the paddy plant (Santali); kolom (B.); kolom mit = to engraft; kolom porena = the cutting has struck root; kolom kat.hi = a reed pen (Santali.lex.) cf. kolom = a reed, a reed-pen (B.); qalam (Assamese.Hindi); **kolma hor.o** = a variety of the paddy plant (Desi)(Santali.lex.Bodding) kolom baba = the threshed or unthreshed paddy on the threshing floor; kolom-ba_rum = the weight a man carries in taking the paddy from the threshing floor to his house; kolom = a threshing floor (Mundari); cf. kal.am (Tamil) [Note the twig adoring the head-dress of a horned, standing person]

ku_l.e stump (Ka.) [ku_li = paddy (Pe.)] xo_l = rice-sheaf (Kur.) ko_li = stubble of jo_l.a (Ka.); ko_r.a = sprout (Kui.) **ko_le** = a stub or stump of corn (Te.)(DEDR 2242). kol.ake, kol.ke, the third crop of rice (Ka.); kolake, kol.ake (Tu.)(DEDR 2154) [kural = corn-ear (Ta.)]

 (21) (24) **Sign 104 (70)**

Pairing signs could be graphemes or variants of the same glyph, i.e., glyphs connoting the same lexeme.[9]
kolma = a paddy plant (Santali) Rebus: **kolime**= furnace (Ka.)[10]

Five-petalled plant or five-branched shrub

Ur cylinder seal with *taberna montana* plant, BM 122947; Signs 162 and 169

Ur cylinder seal impression (cut down into Ur III mausolea from Larsa level; U. 16220), *Iraq.* BM 122947; enstatite; Legrain, 1951, No. 632; Collon, 1987, Fig. 611. Source: Editors of Time-Life Books, 1994, *Ancient India: Land of Mystery*, p. 12. The legend reads:

[9] **tagara** = taberna montana (Skt.) Rebus: **t.agromi** = tin metal alloy (Kuwi)

[10] Alternative homonym: **gan.t.a** = a stub, the stump of a corn-stalk; gan.t.e = the cereal *holcus picatus*; pl. gan.t.elu = id., also called sajjalu in southern Telugu districts (Te.lex.) Rebus: kan.d. = furnace (Santali)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

"The seal was discovered in a pre-2000 BCE tomb in Ur, but the bull image is stylistically like those found in the Indus Valley. The seal and similar ones unearthed elsewhere in Mesopotamia offer compelling evidence of trade contacts between Harappans and Mesopotamians." Trader who? Trading, what?

takaram tin, white lead, metal sheet, coated with tin (Ta.); tin, tinned iron plate (Ma.); tagarm tin (Ko.); tagara, tamara, tavara id. (Ka.) tamaru, tamara, tavara id. (Ta.): tagaramu, tamaramu, tavaramu id. (Te**.); t.agromi** tin metal, alloy (Kuwi); tamara id. (Skt.)(DEDR 3001). trapu tin (AV.); tipu (Pali); tau, taua lead (Pkt.); tu~_ tin (P.); t.au zinc, pewter (Or.); **taru_aum** lead (OG.); tarvu~ (G.); tumba lead (Si.)(CDIAL 5992).

takar sheep, ram, goat (Ta.); *tagar* ram (Ka.); *tagaru* (Tu.); *tagaramu, tagaru* (Te.); *tagar* (M.)(DEDR 3000).

t.agara = *taberna montana* (Skt.)

ran:ga, ran: pewter is an alloy of tin lead and antimony (an~jana) (Santali).

ran:ga ron:ga, ran:ga con:ga = thorny, spikey, armed with thorns; edel dare ran:ga con:ga dareka = this cotton tree grows with spikes on it (Santali) [Note the thorns on the round object in front of the bull on the Ur cylinder seal impression – U 16220]

Each of the glyphs shown on this cylinder seal may relate to lexemes connoting mineral ores: a flowering shrub; scorpion; bull; a wide-mouthed pot, monkey(?), two serpents on the upper register. Humped bull stands before a palm-tree, feeding from a round manger or a bundle of fodder (probably, rays of sun or a cactus); behind the bull is a scorpion and two snakes; above the whole a human figure, placed horizontally, with fantastically long arms and legs, and rays about his head.

The glyphs on this cylinder seal are:

*Short linear strokes borders on top and bottom of the cylinder

*A zebu (Bra_hman.i) bull

**A cactus (with thorn) or radiating sun in front of the bull

If the round object with thorns in front of the bull is a stone, then it may connote **vat.loi**, stone, a rebus of brass, vat.loha is apposite, the enstatite seal may contain other metal/mineral rebus representations.
[Or, sun depicted with rays? glyph: **arka** 'sun'; rebus substantive: **akka, arka** 'copper']

***A scorpion**

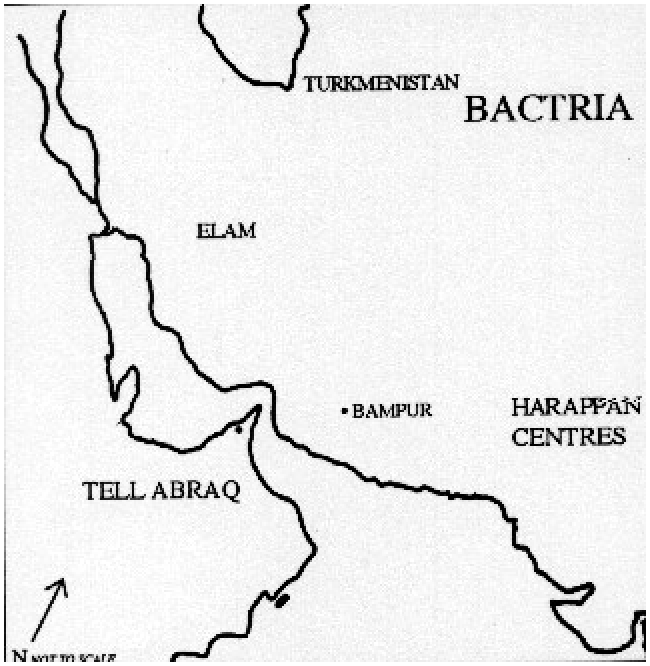
*A wavy line (snake? glyph: **na_ga** 'snake'; rebus substantive: **na_ga** 'lead') below the scorpion (horizontal)

*A five-petalled plant (or, flower?) *Tabernae montana*? [A similar pictorial motif is noticed in some inscribed objects of Bactria-Margiana Archaeological Complex (Lamberg-Karlovsky)]

*A person with a turned face and hair tied into a bun (?) and bangles on one visible arm [depicted on the upper register (horizontally, perhaps to save space on the cylinder)] The person is tall and thin: *kan:kar., kan:kur*. very tall and thin, large hands and feet (Santali)

***Taberna montana* motif on an inscribed copper-alloy axe**

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



In the pictures of a shaft-hole axe with relief decoration, there are motifs which recur in the SSVC inscribed objects: *taberna montana* (with three prongs, possibly five), smiting person with his hair tied into a bun at the back bound by a rolled fillet and with a short beard or stubble on his face, kneeling adorant, tree:

Shaft-hole axe with relief decoration (both sides). Copper alloy. Southeastern Iran. C. late 3rd or early 2nd millennium BCE 6.5 in. long, 1980.307 Metropolitan Museum of Art, New York. "However, the combined problems of unknown provenance and unparalleled features make this attribution tentative. The symmetrical axe has a splaying blade, an elliptical shaft hole with semicircular outline pierced by rivet holes, and a fan-shaped butt. Both sides are ornamented with low-relief figural decoration, cast as one with the axe. The features of the figures were detailed by chasing that has been partially obscured by corrosion. On one side is a male figure in a smiting posture, with his left hand raised above his head holding a club and his right leg extended and carrying the weight of his body. On the butt is a three-petalled floral form with two leaves emerging from a circular stem. On the other side are two registers: above is a standing figure turning his head back and perhaps raising his left hand in a plea for mercy; below, in front of a tree, is a bound, kneeling prisoner, behind whom is the upper body of a victim falling headfirst to the ground. **The images on the axe, when both sides are considered, suggest the commemoration of military victory. The smiting figure is the victorious ruler, and the standing figure and bound, falling captives are his vanquished enemies. In Mesopotamia, military victories were often celebrated on monumental carved and inscribed steles set up on public view. One of the most famous of these monuments, even in antiquity, and one that shares numerous features with the axe, is the stele of Naraim Sin, thought to have been originally displayed in the city of Sippar to memorialize his victory over rebellious tribes in the Zagros mountains…It is likely hat the same imagery also inspired the victory scene illustrated on the copper axe…it is possible to suggest that it was made in the east under the influence of Akkadian**

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

imagery."[After Fig. 7 in: Holly Pittman, 1984, *Art of the Bronze Age: Southeastern Iran, Western Central Asia, and the Indus Valley*, New York, The Metropolitan Museum of Art, pp. 29-30].

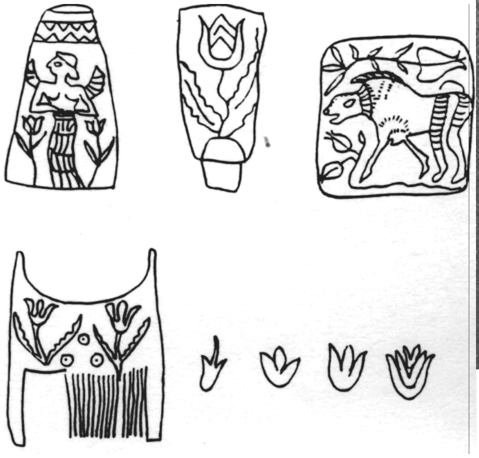
Logographs: (1) Dotted circles and (2) *taberna montana* motif

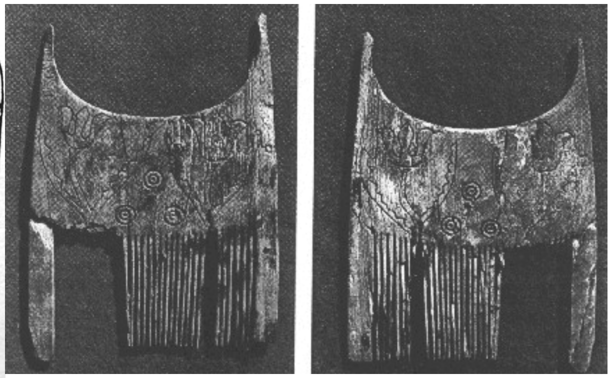
Tell Abraq comb (TA 1649; 11x8.2x0.4 cm); decorated bone comb in a context datable to ca. 2100-2000 BCE at Tell Abraq, emirate of Umm al-Qaiwain, United Arab Emirates, on the southern coast of the Arabian Gulf (Fig. 2 a and b in: D.T. Potts, 1993, A new Bactrian find from southeastern Arabia, *Antiquity* 67 (1993): 591-6) Two logographs used are: dotted circles (3) and two flowers, long-stemmed, with lanceolate-linear leaves with undulate margins (like Tulipa montana, Lindl. or mountain tulip). The flower motif occurs on a Bactrian flask (picture below).

A soft-stone flask, 6 cm. tall, from Bactria (northern Afghanistan) showing a winged female deity (?) flanked by two flowers similar to those shown on the comb from Tell Abraq (After Pottier, M.H., 1984, *Materiel funeraire e la Bactriane meridionale de l'Age du Bronze*, Paris, Editions Recherche sur les Civilisations: plate 20.150)

Location of Tell Abraq, southern coast of Arabian Gulf

It will be established through the use of lexemes from the Indian linguistic area that the motifs: (1) dotted circles which recur on ivory combs; and (2) the flower -- 'three-leaf motif' (which looks like a mountain tulip)-- both motifs are related to the cosmetic substances used by women to beautify their hair and bodies (unguents for hair and body). The 'dotted circles' motif also occurs in metallurgical contexts. The 'three-leaf motif' also occurs in metallurgical contexts (See the inscription of the single sign resembling this motif on the Cretan copper ingot--illustrated). The homonyms which relate to cosmetics also represent lexemes related to metallurgy.



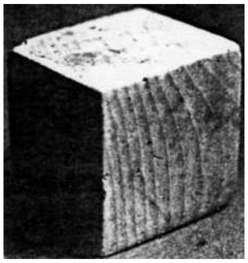


Ivory comb with Mountain Tulip motif and dotted circles. TA 1649 Tell Abraq.

[D.T. Potts, South and Central Asian elements at Tell Abraq (Emirate of Umm al-Qaiwain, United Arab Emirates), c. 2200 BC—AD 400, in Asko Parpola and Petteri Koskikallio, *South Asian Archaeology 1993*: , pp. 615-666]

Tell Abraq is an Arabian peninsula site which used Harappan weights circa 2200 BCE..

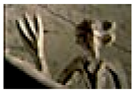
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



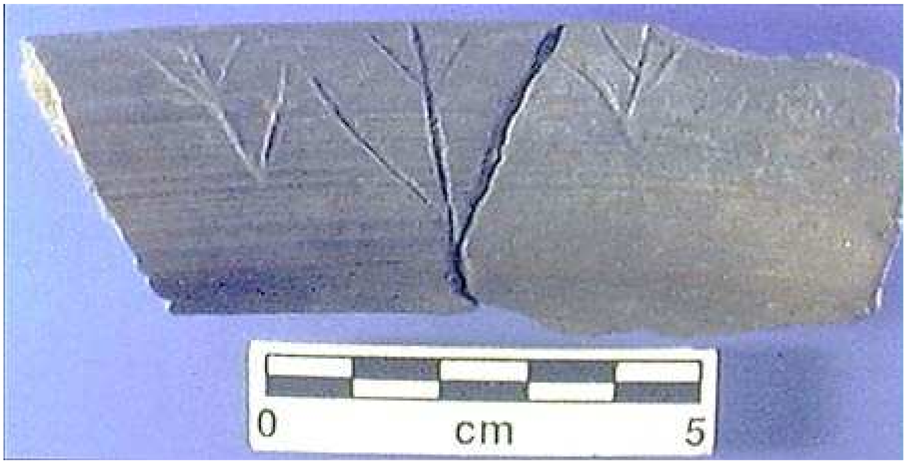
Harappan weight TA 1356 from Tell Abraq. C. 22nd cent. BCE. Banded chert or flint weight 54.06 g. This is approx. 4 times the unit Harappan weight of 13.63 g.

Wild tulip motif. A motif that occurs on southeast Iranian cylinder seals and on Persian Gulf seals. 1st row: Bactrian artifacts; 2nd row: a comb from the Gulf area and late trans-Elamite seals [After Marie-Helene Pottier, 1984, *Materiel funeraire de la Bactriane meridionale de l'age du bronze*, Recherche sur les Civilizations, Memoire 36, Paris, fig. 21; Sarianidi, V.I., 1986, Le complexe culturel de Togolok 21 en Margiane, *Arts Asiatiques 41*: fig. 6,21; Potts, 1994, fig. 53,8; Amiet, 1986, fig. 132]. The ivory comb found at Tell Abraq measures 11 X 8.2 X .4 cm. Both sides of the comb bear identical, incised decoration in the form of two long-stemmed flowers with crenate or dentate leaves, flanking three dotted circles arranged in a triangular pattern. Bone and ivory combs with dotted-circle decoration are well-known in the Harappan area (e.g. at Chanhu-daro and Mohenjo-daro), but none of the Harappan combs bear the distinctive floral motif of the Tell Abraq comb. These flowers are identified as tulips, perhaps Mountain tulip or Boeotian tulip (both of which grow in Afghanistan) which have an undulate leaf. There is a possibility that the comb is an import from Bactria, perhaps transmitted through Meluhha or SSVC to the Oman Peninsula site of Tell Abraq.

[The homonym, **takarai**, or **tagaraka** is a five-petalled *tabernaemontana* flower used as a hair-fragrance]. tagar = a flowering shrub; a plant in bloom (G.lex.) tagara = the shrub tabernaemontana coronaria, and a fragrant powder or perfume obtained from it, incense (Vin 1.203); *tagara-mallika_* two kinds of *gandha_* (P.lex.) *t.agara (tagara)* a spec. plant; fragrant wood (Pkt.lex.) *tagara* = a kind of flowering tree (Te.lex.)

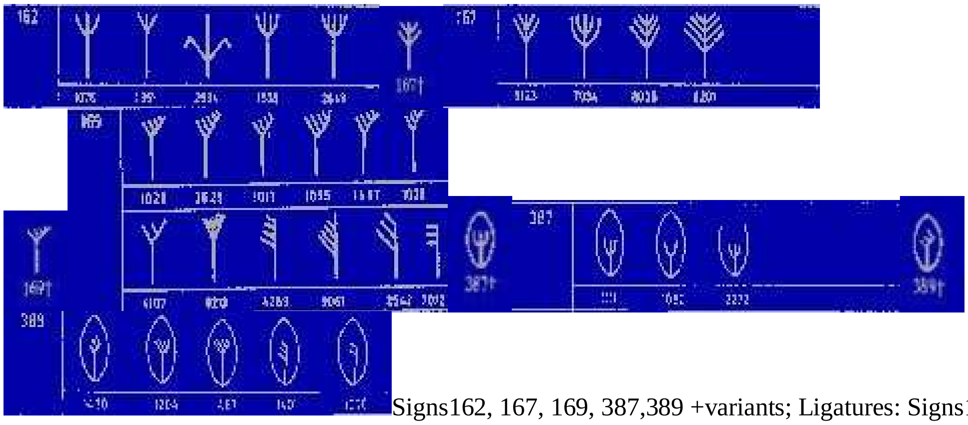


Seal impression from Harappa (Kenoyer, 1998); a woman is carrying a three-petalled flower (interpreted as **tagaraka**, used as an aromatic unguent for the hair; see the emphasis on the hair-do, with two buns of hair). takaram means 'tin' (Tamil).

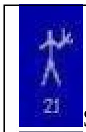
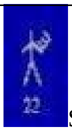
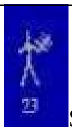
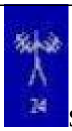
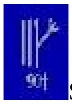
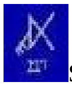
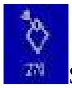
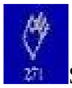
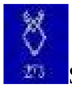
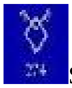
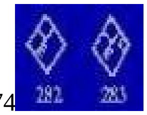
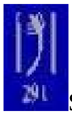
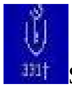
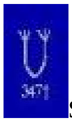
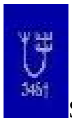
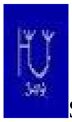
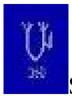
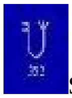
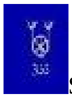
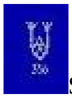
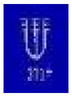
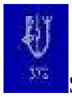
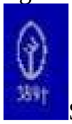
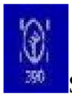
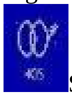


Slide 124 Inscribed Ravi sherd (1998 find at Harappa: Kenoyer and Meadow); the sherd contains the same sign (ca. 3300 BCE). The sign on this potsherd (with five petals as in Taberna Montana) is stylized as Sign 162 (with three prongs) and Sign 165 (with five petals). Sign 167 shows five petals (and variants show many more branches). The sign also is ligatured to form other signs:

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



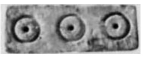
Signs162, 167, 169, 387,389 +variants; Ligatures: Signs163, 166-6, 168, 90, 91,223,224,227,235.262,270,273,274, 282,283,291,331, 347-352, 355-357,371,372, 388-390,395,405

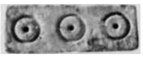
 Sign 21  Sign 22  Sign 23  Sign 24  Sign 90 Sign 91 Sign 223
Sign 224  Sign 227 Sign 235  Sign 270  Sign 271  Sign 273  Sign
274   Sign 291  Sign 331 Sign 346  Sign 347  Sign 348  Sign
349  Sign 350 Sign 351  Sign 352  Sign 355  Sign 356 Sign 357 
Sign 371  Sign 372 Sign 387 Sign 388  Sign 389  Sign 390 Sign 395
 Sign 405

Signs 90,91,223,224,227,235.262,270,273,274,282,283,291,331,347-352,355-357, 371,372, 388-390,395,405 [With ligatures of Sign 162 or Sign 169]

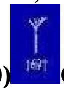
Signs 162 to 168 [Orthography: sprout]. As a countable object, the sign represents the rebus of (number of) [smith's] forges, the number (count) being indicated by short linear strokes. A variant lexeme of Sign 165 (because of five petals shown) could be: **tagara**, *tabaernae montana*, a flowering, fragrant shrub; rebus: **takaram** = tin (Ta.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

(40) **Sign 162 (212)**  h352C Dotted circles. Field symbol 83 (10)

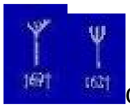
Grapheme:  **tamar** = hole in a plank, commonly bored or cut; gimlet, spring awl, boring instrument; tavar = to bore, a hole; hole in a board (Ta.); tamar = hole made by a gimlet; a borer, gimlet, drill (Ma.); tamire, tagire = the pin in the middle of a yoke (Te.); tamiru = gimlet (Tu.)(DEDR 3078).

tavaru, tavara, trapu, tavarinadu, **tagara**, **tamara** = tin, tra_pus.a (Ka.); tavaramu, tamaramu (Te.); tamara = tagara = tin, lead; trapu = id. (Ka.) trapulamu, trapuvu = tin; lead (Te.)

(48) **Sign 169 (240)**Copper tablets (60) Hare. Field symbol 16 (19)

Glyph: field symbol: **kulai** = hare (Santali)
Rebus: **kol** = metal (Ta.); kola = blacksmith (Ma.); kol, kollan- (Ta.); kolime, **kulime**, kolume = a fire-pit or furnace (Ka.); kolime id., a pit (Te.); kulume kanda_ya = a tax on blacksmiths (Ka.) kolimi titti = bellows used for a furnace (Te.)

Graphemes: kolike, kun.ike, kulike, kol.ike = a clasp, a hook (Ka.Te.); kol.uvu = to connect, join, tie together, hook (Ta.)

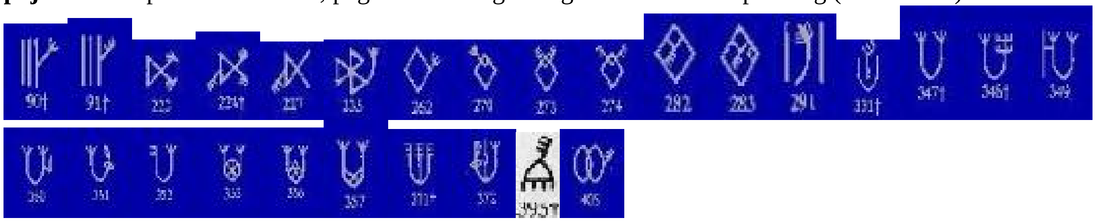
Graphemes: **kolom** = paddy plant (Santali) **ko_li** = a stubble of jo_l.a (Ka.); ko_le a stub or stump of corn (Te.) **kolime** = furnace (Ka.) cf**.** **tagara** = taberna montana (Skt.) Rebus: **tagromi** tin metal alloy (Kuwi) Sign 169 thus connotes a specific metal (**kol**): tin; lexemes: t.agromi + ko_li; glyphs: stubble, taberna montana: **tagara ko_li**

This cluster of signs –Sign 169 and Sign 162 (representing *taberna montana*) is sometimes prefixed with short numeral strokes. The count of short numeral strokes might represent the number of parts used to alloy with 8 parts of copper.

This is surmised from a specific lexeme **tara_** : an alloy of 8 parts of copper and 5 parts of tin, a ratio of alloying for making bronze vessels.

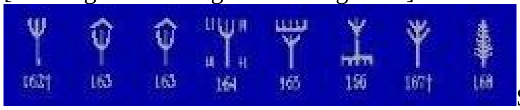
panje, panjho = the hand opened out; a claw, a paw; the five on a dice in play; *pasli_* the hollow of the hand (G.) pan~jali = with outstretched hands, as token of reverence (Skt. pra_n~jali)(Pali.lex.) pan~ja_ = the paw, the palm; the image of a hand worshipped and taken in procession during the Mohurrum festival (Te.lex.)
Sign 169

pajhar. = to sprout from a root; pagra = a cutting of sugar-cane used for planting (Santali.lex.)



PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Signs 90,91,223,224,227,235.262,270,273,274,282,283,291,331,347-352,355-357, 371,372, 388-390,395,405 [With ligatures of Sign 162 or Sign 169]



Signs 162 to 168 [Orthography: sprout]. As a countable object, the sign represents the rebus of (number of) [brick] kilns, the number (count) being indicated by short linear strokes. A variant lexeme of Sign 167 (because of five petals shown) could be: **tagara**, *tabaernae montana*, a flowering, fragrant shrub; rebus: **takaram** = tin (Ta.lex.)

tagr.a = large, massive, strong; tagoj = strength (Santali.lex.)

taran:ga wave (R.Pali); taram.ga (Pkt.); taran:g (P.); taran. brook, current, stream of water (Ku.); taran:ga, **tagara** wave (Si.)(CIDAL 5699).

tagar = to be stopped or impeded; to impede (Ka.lex.) [cf. the motif of a person holding back tigers or bulls on either side].

tagar. = a trough; tagar.re surti ar cunko sipia they mix surti and lime in a trough (Santali.lex.) **taga_rum** [Pers. **tagarih**] a bricklayer's trough; a hod (G.lex.) [Is this a representation of a trough shown in front of the short-horned bull and other animals on many seals? The possibility is enhanced because the shrub also appears in front of a short-horned bull.] **tagar.a** = syn. of **masala gar.a**, a pit for preparing mortar; masala = mortar (Mundari.lex.) tagar = a tub, a bucket, a trough, a platter (P.lex.) d.aka d.ak = a wooden trough used for feeding pigs, watering cattle, and at times for bathing (Santali.lex.) da_gara, d.a_gara. d.a_gara_ = a large flat basket woven of thin bamboo strips in which articles are fried or exposed to the sun (Te.lex.) d.agri_ = winnowing basket (Mth.)(CDIAL 5522). d.haki = a large basket (Santali.lex.) [Rebus: 'trough' in front of animals]. **d.a_gara, d.a_gara_** = a large winnowing basket; a large square tray of bamboo splints (Te.lex.) **tavaya** = frying pan (Pkt.); **tawa** = griddle (K.); taula_ large earthen cooking vessel (Bi.Mth.); **tavali_** metal or earthen vessel (M.)(CDIAL 5670).

t.agara, borax (Si.Skt.) t.angan.a, t.anka, t.ankaks.a_ra borax (Skt.); t.a_kan:kha_r brute borax, tincal (M.); t.a_ngan.a_ id. (Or.); dana_ka_r borax, alum (Kho.) < Prob.Ir., cf. Persian tanga_r (CDIAL 5431. 5437).

tagara, tavara [Tbh. of *tamara* or *trapu*] tin (Ka.Te.Ta.M.)(Ka.lex.) takaram tin, white lead, metal sheet, coated with tin (Ta.); tin, tinned iron plate (Ma.); tagarm tin (Ko.); tagara, tamara, tavara id. (Ka.) tamaru, tamara, tavara id. (Ta.): tagaramu, tamaramu, tavaramu id. (Te.); t.agromi tin metal, alloy (Kuwi); tamara id. (Skt.)(DEDR 3001). trapu tin (AV.); tipu (Pali); tau, taua lead (Pkt.); tu~_ tin (P.); t.au zinc, pewter (Or.); taru_aum lead (OG.); tarvu~ (G.); tumba lead (Si.)(CDIAL 5992).

tagad.u = a plate sheet leaf or foil; of metal (Te.lex.) takat.u foil set below a precious stone to enhance its luster; metal plate (Kampara_. Nakarni_. 28)(Ta.lex.) Thin metal plate: takat.u quality of being thin and flat, metal plate, leaf blade (Ta.); takat.u, takit.u thin metal plate, spangle (Ma.); takit.a copper leaf written over and worn as an amulet (Ma.); tagad.u metal beaten into a plate, flat piece or sheet of metal (Ka.); thin metal plate (Tu.); takat., takt.e_ metal beaten into a plate or leaf (M.)(DEDR 2995). *tagat.u* = gold lace; tagat.i = of gold lace; ornamented with gold lace (Te.lex.) takat.i gold-embroidered silk (Ta.) (Ta.lex.) cf. takat.u foil set below a precious stone to enhance its luster; metal plate (Kampara_. Nakarni_. 28)(Ta.lex.)

Alloy: **tara_** alloy of 8 parts of copper to 5 of tin, used for making metal vessels (pukar..tara_-p-po_kkillai) (Cine_n-. 169)(Ta.lex.)

Rebus glyph: **ta_ra_** = stars (Skt.)

tagad.o = [Skt. trika a group of three] the figure three (3)(G.lex.) [Note. Three persons shown next to a tree on a tablet].

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

tagara = ram (Te.lex.); takaram (Ta.lex.); t.agaru, t.agara, t.igaru, tagar = a ram (Ka.); tagara, tan:gad.i_ (H.M.); **tagade_ra, tagate_ra** = having a ram for his vehicle: fire (Ka.)(Ka.lex.) Old Tamil: **takar** 1. sheep; 2. ram; 3. goat; 4. aries in the zodiac; 5. male ya_r..i 6. male elephant; 7. male shark. **t.agarudaleya, t.agarutaleya** = daks.abrahmanu, Daks.a, the son of Brahma_, father of Durga_ and father-in-law of S'iva, who on one occasion celebrated a great sacrifice to obtain a son, but omitted to invite S'iva, wherefore S'iva interrupted the sacrifice, and by his incarnation Vi_rabhadra had Daks.a decapitated; for the decapitated head that of a ram was substituted (Ka.lex.) 4080.Images: ram; male elephant; male shark: takar sheep, ram, goat, male of certain other animals (porutakar ta_kkar-ku-p- pe_run takaittu : Kural.486); male elephant; male shark (Ta.lex.) (ya_l.i, elephant, shark)(Ta.); takaran huge, powerful as a man, bear, etc. (Ma.); tagar, t.agaru, t.agara, t.egaru ram (Ka.) tagaru, t.agaru id. (Tu.); tagaramu, tagaru id. (Te.); tagar id. (M.)(DEDR 3000). tan:gad.i_, tagara a ram (M.H.); tagade_ra having a ram for his vehicle: fire; tagarven.agisu to cause rams to fight (Ka.lex.) da_dlo bokro ram (Kon.lex.) [cf. kara_ male alligator; kar.e_n.u elephant (Ta.lex.)]

Tabernae Montana coronaria

Tabernaemontana amsonia 4077.Wax-flower: takaram wax-flower dog-bane, tabernaemontana; aromatic unguent for the hair, fragrance (Ta.); takaram tabernaemontana coronaria (Ma.); tagara id. (Ka.); t.agara (Pkt.)(DEDR 3002). Tabernaemontana coronaria, tabernaemontana heyncana: nandivraksha, tagara (Skt.); chandni, tagar (H.); siulicop, tagar (B.); East Indian rose-bay wax-flower plant, ceylon jasmine (Eng.);

nandivardhanamu (Te.); nandiyavertam, gandhitagarappu (Ma.); maddarasagida (Ka.); vadli namdit (Konkan.i); is met with in Bengal and south India. Root contains resin, extractive matter and a bitter alkaloit... root or bark is chewed for the relief of toothache... root rubbed with lime-juice is applied to remove opacities of the cornea... milky juice of leaves is dropped into the eye to cure ophthalmia. (Indian materia Medica, p. 1189). cf. tagara a shrub with fragrant white flowers, cultivated in gardens, tabernaemontana coronaria (Ka.lex.) takara-

ja_r..al an aromatic unguent for the hair, mayircca_ntu (Nan-. 368, Mayilai.); tagaram wax-flower dog-bane, tabernae montana (Ci_vaka. 349); aromatic unguent for the hair (Kur-in~cip. 108); fragrance (Aka. Ni.)(Ta.lex.) tagara the shrub tabernaemontana coronaria and a fragrant powder obtained from it (Kaus'.); tagaraka (VarBr.S.); sthagara, sthakara a partic. fragrant powder (TBr.); tagara (Pali); takara (Dhp.); tagara, t.ayara a kind of tree, a kind of scented wood (Pkt.); tuvara, tra a species of cassia plant (Si.)(CDIAL 5622).

tagara = the shrub *tabernaemontana coronaria* and a fragrant powder obtained from it (Kaus'); tagaraka (VarBr.S.); sthagara, sthakara = a particular fragrant powder (TBr.); tagara (Pali); takara (Dhp); tagara, t.ayara a kind of tree, a kind of scented wood (Pkt.); tuvara, to_ra a species of cassia plant (Si.)(CDIAL 5622). Tuvarala_ an incense prepared from a species of tabernaemontana (Si.); tagaravalli_ cassia auriculata (Skt.); tagaravalli_ cassia auriculata (Skt.); tuvarala_ an incense prepared from a species of tabernaemontana (Si.)(CDIAL 5624). tagara tabernaemontana coronarea, an ingredient of perfumes (Jain.Skt.); bignonia chelonoides (Skt.); delphinium brunonianum (Car. Su. 4.42, Ci. 3.268). nata synonym of tagara (Car. Su. 3.23,28). Delphinium ajacis: larkspur seed, field larkspur, feldritterspornsamen (Ger.); part used: the dried ripe seed; habitat: Europe; use: externally as tincture as a parasiticide in pediculosis; internally its action resembles aconite. (Heber W. Youngken, Textbook of Pharmacognosy, Philadelphia, The Blakiston Co., 1950, pp. 337-338). Aromatic unguent: kokke-gid.a tabernaemontana coronaria a shrub with fragrant flowers cultivated in gardens (Ka.lex.); kokke-ka_yi fruit of the tree tabernaemontana coronaria (Tu.)(DEDR 2035). nandi bat.lu gid.a a shrub with fragrant white flowers, cultivated in gardens, tabernaemontana coronaria (Ka.); nandya_varta, nandi-vat.t.a (Ka.)(Ka.lex.) The juice of the flowers is mixed with oil is used to relieve the burning sensation of sore eyes; is rubbed into the head to cure pain in the eyes. (Medicinal Plants of the Philippines, p.739). Ervatamia coronaria = ervatamia divaricata = tabernaemontana coronaria: tagar

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

(B.M.H.Skt.); nandiyavattam (Ta.); gandhitagarapu (Te.); wood: refrigerant; milky juice: used for diseases of eye; root: acrid, bitter, used as local anodyne and chewed for relief of tooth-ache; habitat: upper gangetic plain, Garhwal, E. Bengal, Khasia Hills, Assam, N. Circars and hills 9f Vizagapatam (GIMP, p.110).

t.akkara = collision (Pkt.); t.akora (K.); **t.akaru** = butting (S.); t.akkaran. = to meet, agree (L.); t.akkar = pushing, knocking (P.); t.akkarn.a_ = to collide, meet (P.); t.akkar = shock, jerk, loss (Ku.); t.akar = obstacle, collision (N.); t.akkar = blow (B.); t.akkara, t.a_kara (Or.); t.akkar (H.G.M.)(CDIAL 5424). *tagar* = to be stopped or impeded; to impede (Ka.lex.) [cf. the motif of a person holding back tigers or bulls on either side].

ko_lemmu = the backbone (Te.lex.)

Glyph: old cattle: **kholi_,** kholli_ (P.) [koli_ = a cow (G.)] cf. goul.i, goul.ia_ herdsman (Kon.lex.) goil cowhouse, hut, pasture ground (P.); gol drove of cattle sent to another village (P.); go_uliya herdsman (Pkt.); goili_ (P.)(CDIAL 4259).

xola_ = tail (Kur.); qoli id. (Malt.)(DEDr 2135). [Note the rump of ox with tail depicted ligatured to horned, standing persons].

Adornment of an idol **ko_lamu** (Te.)

Ficus elastica, banyan: **go_l.i** (Ka.); ko_l.i (Ta.)

Ornamental design: **ko_lam** (Ta.)

ko_la_n mason, builder (Ma.)

Boat, raft**ko_lamu** = boat (Te.); raft (Ma.); ko_l = raft (Ta.)

Tub: **go_lemu** (Te.) gollemu, gol.l.emu (Te.)

xolla_ (Kur.) razor

ko_l. = a planet, navagraha; ra_ku (planet)[Skt. ra_hu] (Ta.lex.)

Pictorial motifs of spearing or killing

koru, kori, korru to kill (Kor.)

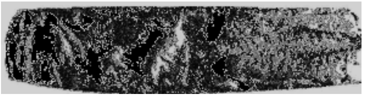
Rebus: ***koru*** ‘a bar of metal’ (Tu.)

Limestone wall plaque from Susa (After J. Boese, 1971, *Almesopotamische Weihplatten: Eine sumerische Denkmalsgattung des 3, Jahrtausends v. Chr*., Berlin/New York: de Gruyter,: Taf: XXIV.21]. This plaque shows, on the lower register a person plunging a dagger at a tiger which seems to have subdued a bull. Both the tiger and bull are motifs which recur on inscribed objects of Bharatiya civilization. The top register shows a scene with two seated persons receiving some vase; one on the left is playing on a lute. The plaque is perhaps related to a temple which stood on the Acropole.

A parallel pictorial motif occurs in Crete on an ornamented dagger. A sword, found in the palace of Mallia and dated to the Middle Minoan period (2000-1600 BC), is an example of the extraordinary skill of the Cretan metalworker in casting bronze. The hilt of the sword is of gold-plated ivory and crystal. A dagger blade found in the Lasithi plain, dating about 1800 BCE

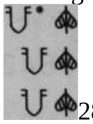
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

(Metropolitan Museum of Art), is the earliest known predecessor of ornamented dagger blades from Mycenae. It is engraved with two spirited scenes: a fight between two bulls and a man spearing a boar.


m1430Bt

m1430C

m1430At Pict-101: Person throwing a spear at a buffalo and placing one foot on its head; three persons standing near a tree at the centre.


2819 Pict-60: Composite animal with the body of an ox and three heads [one each of one-horned bull (looking forward), antelope (looking backward) and bison (looking downwards)] at right; a goat standing on its hindlegs and browsing from a tree at the center.

“The motif of a figure grasping two felines (usually tigers) by the neck is found on another tablet from Harappa (the twisted terracotta example illustrated) and on tablets and seals from Mohenjo-daro. One of those from Mohenjo-daro appears to depict a male with genitalia (Parpola, 1994, p. 247 and Franke-Vogt, 1991; Taffel XXXV: 248). Other examples are not so clear, but they have usually been assumed to represent males. As a likely female, the figure from Harappa conforms in sex with depiction of a composite female-bovine figure grasping a horned tiger on a seal from Mohenjo-daro (Franke-Vogt, 1991: Taffel XXXVI: 263). A Parpola (1994, p. 246) points out, the ‘contest’ motif is one of the most conincing and widely accepted parallels between Harappan and Near Eastern glyptic art.’ In the Harappan case, however, bulls and lions are replaced by tigers, and females as well as males are depicted as ‘hero(ine)’. Another interesting feature of the tablets is that whereas the bovine especially are depicted as clearly male, the sex of the huian figures is often not so evident.” [Richard Meadow and Jonathan Mark Kenoyer, 1997, Excavations at Harappa 1994-1995: new perspectives on the Indus scriptl, craft activities, and city organization, in: Raymond Allchin and Bridget Allchin, 1997, *South Asian Archaeology 1995*, Oxford and IBH Publishing].

"We have found two other broken tablets at Harappa that appear to have been made from the same mold that was used to create the scene of a deity battling two tigers and standing above an elephant. One was found in a room located on the southern slope of Mount ET in 1996 and another example comes from excavations on Mound F in the 1930s. However, the flat obverse of both of these broken tablets does not show the spearing of a buffalo, rather it depicts the more well-known scene showing a tiger looking back over its shoulder at a person sitting on the branch of a tree. Several other flat or twisted rectangular terracotta tablets found at Harappa combine these two narrative scenes of a figure strangling two tigers on one side of a tablet, and the tiger looking back over its shoulder at a figure in a tree on the other side." [JM Kenoyer, 1998, p. 115].

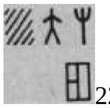
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Feline figurine terracotta. A woman’s face and headdress are shown. The base has a hole to display it on a stick. (After JM Kenoyer/Courtesy Dept. of Archaeology and Museums, Govt. of Pakistan).

It appears that the person holding back the two rearing jackals on the tablet is a woman: **ko_l** ‘woman’ (Nahali); dual. **ko_lhilt.el** (Sudhibhushan Bhattacharya, Field-notes on Nahali, *Ind. Ling.* 17, 1957, p. 247); kola = bride, son’s (younger brother’s) wife (Kui) **ko_l** is a phonetic determinative of the two jackals, **kol** ‘tiger’; rebus: **kol** ‘metal’ (Ta.)

The decoding of ‘woman’ glyph on the tablet as a phonetic determinative of **kol** ‘tiger’ gains surprising validation from a ligatured terracotta image of a feline tiger with a woman’s face and headdress..

Mesopotamia. Cylinder seal, ca. 2254-2220 BCE (mature); ceramic; cat. 79; two groups in combat. A naked, bearded hero wrestles with a water buffalo, and a bull-man wrestles with a lion. In the centre: inscription (unread). Appears to be recut. Pictorial motif: Person grappling with two tigers standing on either side of him and rearing on their hindlegs.

Person throwing a spear at a buffalo and placing one foot on the head of the buffalo. 2279 seal impression, Mohenjodaro (DK 8165); after Mackay 1938: pl.88, no.279

ad.arincu, ad.arucu *caus.* of ad.a.ru = to shoot as a missile (Te.)

aduru = native metal (Ka.)

homa = bison (Ko.)

soma = electrum (Skt.); hom = gold (Ka.)

kolsa = to kick the foot forward, the foot to come into contact with anything when walking or running; **kolsa pasirkedan** = I kicked it over (Santali.lex.)

kola = killing, e.g. a_d.ukola = woman-slaying (Te.) Thus, **homa kola** = bison slaying. Rebus: **hom** = gold (Ka.) **kol** =metal (Ta.)

kulai = a hare (Santali)

ko_l.e = the outer angle of the eye (Ka.Ta.)

kol., koral = the throat (Ka.)

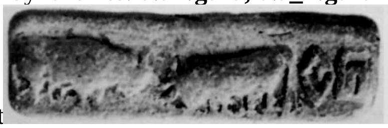
ko_le = a stub or stump of corn (Te.)

ko_lu = an orifice, hole (Te.) kolo = a hole in a wall (G.); koravum = to bore a hole (G.) khol = hollow (Santali)

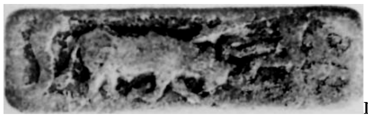
kholoe, khaloi = a fish basket (Santali)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

The act of throwing a spear may be connoted by lexemes: **d.an:gara, d.a_n:gara** = throwing (Skt.lex.)

m0492At m0492Bt Pict-14: Two bisons standing face to face.

saman: = to offer an offering, to place in front of; front, to front or face (Santali)
sa_man = song accompanying processing of soma in sa_maveda (Vedic) **samr.obica**, stones containing gold (Mundari.lex.) **saul., saul** = rather brackish (M.); **caud.u** = fuller's earth (Te.)(DEDR 2386) cf. *soma* (R.gveda) **sovnakay, somnakay** = gold [cf. suvarn.a 'gold' (Skt.)]; Dardic **son, surun** = gold. **soma man.al** = sand containing silve ore (Ta. Winslow) **assem**[14] = electrum (Old Egyptian)

m0492Ct 2835 Pict-99: Person throwing a spear at a bison and placing one foot on the head of the bison; a hooded serpent at left. [substantive: *bakher* 'homestead'. glyph: *phan.i* 'hood of cobra'; substantive: *pan.e* stone quarry. In thie context of *bail* ox; rebus: *bali* (iron ore), iron stone quarry]. **na_ga** = snake (Skt.)[11] Rebus: **na_ga** = lead (Skt.) **homa** = bison (Pengo); **soma** = electrum (RV) Alternative: **ad.ar** = bull (Santali) **aduru** = native metal (Ka.)

Sibri-damb01A Sibri-damb01B

Tepe Yahya. Rectangular steatite (?) stamp seal with perforated knob on the back with lines crossed from corner to opposite corner. Impression on a pottery sherd of a Harappan seal of a type illustrated by Joshi and Parpola (Joshi and Parpola 1987: 88-100). Lamberg-Karlovsky and Tosi 1973: fig. 121.

kulhi = village street (Santali)

[11] **pan.du bin:** = a cobra snake (Santali.lex.) **pan.du bin:** = a sword (Santali.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Smith, karma_ra

kamar a semi-hinduised caste of blacksmiths; **kamari** the work of a blacksmith, the money paid for blacksmith work; **nunak ato reak in kamarieda** I do the blacksmith work for so many villages (Santali) **ka_rma_ra** = metalsmith who makes arrows etc. of metal (RV. 9.112.2: **jarati_bhih os.adhi_bhih parn.ebhih s'akuna_na_m ka_rma_ro as'mabhih dyubhih hiran.yavantam icchati_**) kammar a, kamma_ra, kammaga_ra, **karma_ra, karmaka_ra, kammaga_ra, kamba_ra** = one who does any business; an artisan, a mechanic; a blacksmith (Ka.)[15] **kamma_l.a** = an artisan, an artificer: a blacksmith, a goldsmith (Ta.Ka.); a goldsmith (Ka.) kammara = the blacksmith or ironsmith caste; kammaramu = the blacksmith's work, working in iron, smithery; kammarava_d.u, kammari, kammari_d.u = a blacksmith, ironsmith; kammarikamu = a collective name for the people of the kamma caste (Te.) **karma_ras'a_la** = workshop of blacksmith (Skt.) **kamma_r-asa_le** = the workshop of a blacksmith (Ka.); **kamasa_lava_d.u** = a blacksmith (Te.) **kamarsa_ri_** smithy (Mth.) kamba_r-ike, kamma_r-ike = a blacksmith's business (Ka.Ma.)(Ka.lex.)(DEDR 1236).

The seated person wears a waist-band.

Rebus: **karma_ras'a_la** = workshop of blacksmith (Skt.)

Glyph: **kamarsa_la** = waistband (Te.)

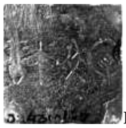
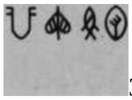
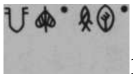
kamba, kambha = Tbh. of stambha or skambha = a post, a pillar (Ka.Te.Tu.Ma.M.Skt.); a mast (Ta.Ma.) kambhagat.t.u = a construction on pillars (Ka.)

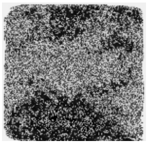
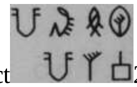
kambu = a conch, a shell (Ka.); a bracelet (Ka.)

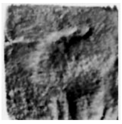
kamarasa_la = waist-zone, waist-band, belt (Te.) kammaru = the loins, the waist (Ka.Te.M.); kamara (H.); kammarubanda = a leather waist band, belt (Ka.H.) **kammaru** = a waistband, belt (Te.) kammarincu = to cover (Te.) kamari = a woman's girdle (Te.) komor = the loins; komor kat.hi = an ornament made of shells, resembling the tail of a tortoise, tied round the waist and sticking out behind worn by men sometimes when dancing (Santali) kambra = a blanket (Santali) [Note the pannier tied as a waist band to the one-horned heifer.]

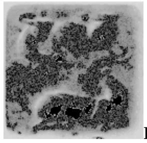
krammar-a = to turn, return (Te.); krammar-ilu, krammar-illu, krammar-abad.u = to turn, return, to go back; krammar-u = again; krammar-incu = to turn or send back (Te.lex.) [Note the glyph showing an antelope or a tiger turning back]. kraman.a = act of walking or going (G.lex.) krama = step, series (AV); krame_n.a by degrees (R.); kama = step, way (Pali); foot, series (Pkt.); -krem in oi~n-krem and u~_-krem = upper and lower teeth (Wg.); krammar-ilu, krammar-illu, krammar-abad.u = to turn, return, to go back; krammar-u = again; krammar-incu = to turn or send back (Te.lex.) [Note the glyph showing an antelope or a tiger turning back]. kraman.a = act of walking or going (G.lex.) krama = step, series (AV); krame_n.a by degrees (R.); kama = step, way (Pali); foot, series (Pkt.); -krem in oi~n-krem and u~_-krem = upper and lower teeth (Wg.) *kamra = the back (Skt.); krem = the back (Kho.)(CDIAL 2776). *parikamra = near the back (Skt.); parikama_ = behind the shoulder (Ash.)(CDIAL 7799v). kamak = back (Sang.); com = back of an animal (Shgh.); *kamak = back of an animal (G.M.); kama neck (Yghn.)(CDIAL 14356).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

m0504At m0504Bt 3323 m0505At m0505Bt
1702

 m1452Act m1452Bct2912 (Similar imagery of an antelope looking back appears on m-1448 to m-1452).

 m0438atcopper m0272 Goat-antelope with horns bending backwards and neck

turned backwards 2554 m0353
Prabhas Patan (Somnath) pbs-001 a,b Two sides of a seal; obverse: three antelopes from top to bottom and in growing sizes; reverse: bottom register: antelope and tiger looking backwards; middle: antelope; top: illegible, perhaps the horns of the head of an antelope.

Substantive: *aduru* ‘native metal’.

*ad.rna_* to twist back one’s limbs or bend the body inward (as under threat of a blow)(Kur.); *ad.re* to strut; *ad.ro* a swaggerer (Malt.)(DEDR 108). [cf. the glyphs of antelope and tiger with their heads turned backwards.]

kamari, kammari declivity, steep bank, cliff, ravine (Ka.); **kamar** chasm, crack, cleft in the ground caused by drought (Ta.)(DEDR 1229).

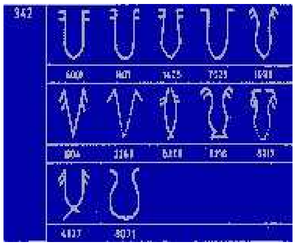
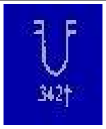
kamar kidin a small species of scorpion; *kidin, kidin kat.kom* a scorpion; *kidin marmar* a species of centipede (Santali)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

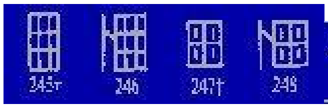
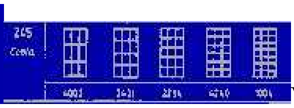
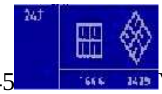
Copper work

Copper work; brazier: **kan** copper work, copper; kan- n-a_n brazier (Ta.); bell metal worker, one of the divisions of the Kamma_l.a caste (Ta.lex.) kanna_n id. (Ma.)(DEDR 1402). kan workmanship (Tiv. Tiruva_y. 5,8,3); kan mam (Tiv. Tiruva_y. 6,2,7)(Ta.) kanaka = a metal (Pali); kanaka = gold (Skt.)

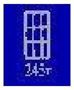
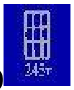
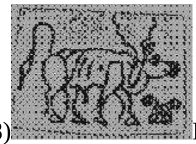
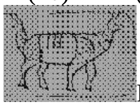
kan.d. furnace, altar (Santali) gan.d.a pit (furnace) **kan.d.i** = furnace, altar; khandha = a trench used as a fireplace when cooking has to be done for a large number of people (Santali.lex.) **kandaka** = a ditch, a trench (Ka.); khandaka (M.H.Te.)(Ka.lex.) This lexeme can be denoted by the dotted circle which is often depicted on ivory (**khan.d**.) objects. *khan.d.ar.an:, khan.d.run:* 'pit (furnace)' (Santali)

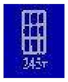
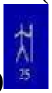


V342**kankha, kan.d.a kankha** = brim, rim of a vessel (Santali); **ka~kh; kanna_** (H.)(Santali.lex.Bodding) **kan.t.u** = the rim of a vessel (Ka.lex.) **kan.d.a** = an earthenware pot (having a neck a little longer than that of a t.hili, but otherwise of about the same shape as this, only somewhat larger; ghar.a kan.d.a = a waterpot of brass (Santali.lex.Bodding)

khan.d.i_ = ivory in rough (Jat.ki_)

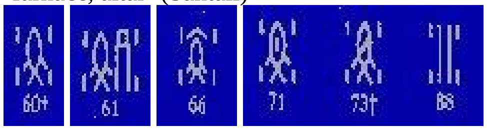


V245

V247 **khan.d.a** a division; a section (G.)

gha~_t. = protuberance of snout of alligator (A.) **gan.d.e** (Te.) gha~r.iya_l (A.B.); ghar.ya_lu = long-nosed porpoise (S.); gha~t. = protuberance on the snout of an alligator (A.)

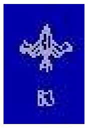
 (70) (21) **Sign 245 (207)** Copper tablets (48)Field Symbol 14 (20) Field Symbol 29 (10)

 (25) **Sign 25 (53)** Copper tablets (12)

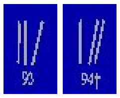
Pairing glyph: nine divisions; **lo** 'nine' (Santali) rebus: loh 'iron, metal' (Skt.); khan.d.a 'division' (Skt.); kan.d. = furnace, altar (Santali) lokhan.d. 'iron, ironware, tools' (G.) lo + khan.d. = rebus: loh 'iron' + kan.d. 'furnace, altar' (Santali)


Signs using four short strokes to subscribe another glyph. **gan.d.a** 'a set of four'; *gan.d.a gut.i* to divide, to make up an account (Santali) *gan.d.i* hole, orifice (Te.); *kan.d.i, gan.d.i* opening, hole, window (Tu.)(DEDR 1176).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



gan.t.ave_t.a = batfowling, nightfowling wherein lights and lowbells are used; **gan.t.a** = bat (Te.lex.)



gan.d.e ‘to place at a right angle to something else, cross, transverse’; *gan.d. gan.d.* ‘across, at right angles, transversely’ (Santali) [Note: A slanted line Lahn.d.a writing of accounts connotes a quarter; a straight line connotes ‘one’.]

ga~r.i~ = a monkey; sakam ga~r.i~ a small species of monkey (Santali) Monkey **gad.ava** = male monkey (Ka.); gad.d.i, **gad.d.e_** (Go.); **kat.uvan**= (Ta.)(DEDR 1140) [Note a seal where a monkey is shown in lieu of a standard device in front of a one-horned bull]. **sakam ga~r.i**~ a small species of monkey (Santali)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Smelting furnace, bat.hi

bat.hi furnace for smelting ore (the same as **kut.hi**) (Santali) **bhat.a** = an oven, kiln, furnace; make an oven, a furnace; **it.a bhat.a** = a brick kiln; **kun:kal bhat.a** a potter's kiln; **cun bhat.a** = a lime kiln; cun tehen dobon bhat.aea = we shall prepare the lime kiln today (Santali); **bhat.t.ha_** (H.) **bhart** = a mixed metal of copper and lead; bhart-i_ya_ = a barzier, worker in metal; bhat., bhra_s.t.ra = oven, furnace (Skt.) **me~r.he~t bat.i** = iron (Ore) furnaces. [Synonyms are: me~t = the eye, rebus for: the dotted circle (Santali.lex) bat.ha [H. bat.t.hi_ Sad.] any kiln, except a potter’s kiln, which is called coa; there are four kinds of kiln: cunabat.ha, a lime-kin, it.abat.ha, a brick-kiln, e_re_bat.ha, a lac kiln, kuilabat.ha, a charcoal kiln; trs. Or intrs., to make a kiln; cuna rapamente ciminaupe bat.hakeda? How many limekilns did you make? Bat.ha-sen:gel = the fire of a kiln; bat.i [H. Sad. bat.t.hi, a furnace for distilling) used alone or in the cmpds. Arkibut.i and bat.iora, all meaning a grog-shop; occurs also in ilibat.i, a (licensed) rice-beer shop(Mundari.lex.)

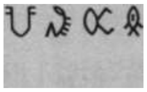
bhat.i = liquor from mohwa flowers (Santali)[16]

Bull's head (bucranium) between two seated figures drinking from two vessels through straws. Yale tablet. YBCE.5447; dia. c. 2.5 cm. Possibly from Ur. Buchanan, studies Landsberger, 1965, p. 204; A seal impression was found on an *inscribed tablet (called Yale tablet) dated to the tenth year of Gungunum, King of Larsa, in southern Babylonia--that is, 1923 BCE according to the most commonly accepted ('middle') chronology of the period. The design in the impression closely matches that in a stamp seal found on the Failaka island in the Persian Gulf, west of the delta of the Shatt al Arab, which is formed by the confluence of the Tigris and Euphrates rivers. We find that on the top register, above the bull’s head, the Yale tablet shows two squares with divisions flanking a circle while in the Failaka tablet shows two birds with wings flanking a tree (or corn stalk).

ka_t.i = fireplace in the form of a long ditch (Ta.Skt.Vedic) **ka_t.ya** = being in a hole (VS. XVI.37); ka_t.a hole, depth (RV. i. 106.6) **kha_d.** a ditch, a trench; **kha_d.o khaiyo** several pits and ditches (G.) *khan.d.run:* ‘pit (furnace)’ (Santali)

bhin.d.ia ‘a lump, applied especially to the mass of iron taken from the smelting furnace’; *bed.a* ‘ingot’ (Santali) *bi_d.u* dross, alloy of iron (Tu.); iron filings or dust (Te.)(DEDR 4218)

khat.a = six (G.)

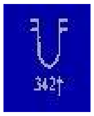
m0269 2663 h171A h171Btablet 

4312 Buffalo. m0312 *kad.ru* ‘buffalo’ (G.); **kad.a** buffalo (Santali) **kat.ra_** bull calf; kat.hr.a_ young buffalo bull; **kat.iya_** buffalo heifer (H.); kat.r.a buffalo calf (WPah.); kat.ai buffalo calf (Gaw.); kat.r.a_ young buffalo (P.)(CDIAL 245). **kat.a_damu** = a he-buffalo (Te.lex.)[17] *ko_r.i* buffalo (Kond.a); *kud.ru* (Pe.Mand.); *ko_ru pl. ko_rka* (Kui); *ko_d.ru, ko_dru, ko_d.ru, go_d.ru* (Kuwi)(DEDR 2256).

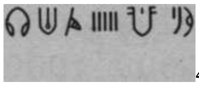
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

bidia to turn a somersault (Santali) *bhindran:* ‘to fall to the ground, to knock down’, *bindar.* ‘to fall down, to collapse’, *bindr.an* ‘to fall or tumble down backwards from a standing or sitting position’ (Santali)

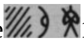
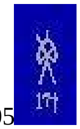
bat.i trs. To overturn, to overset or ovethrow; to turn or throw from a foundation or foothold; to turn on the ground to any extent, or roll; **uaurbat.i**, to upset or overthrow by shoving or pushing; mabat.i to overturn by cutting, to fell trees; **bat.i-n** rflx. v., to lay oneself down; **ba-p-at.i** repr. V., to throw each other; **bat.i-o** to be overturned, overthrown; ba-n-at.i vrb.n., the extent of the overturning, falling down or rolling; **bat.i-n** rlfx.v., to lie down; **bat.i-ar.agu** to bring or send down a slope by rolling; **bat.i bar.a** to roll again and again or here and there; **bat.i-bur** to turn over by rolling (Mundari.lex.)

 (93) **Sign 8 (105)**

A variant of Sign 8 is a horned, standing person ligatured to the buttocks of a bull. **d.hagara_m** = pl. the buttocks, hip (G.) Rebus: **d.han:gar** = blacksmith

m1224A m1224B m1224 m1224e  4319

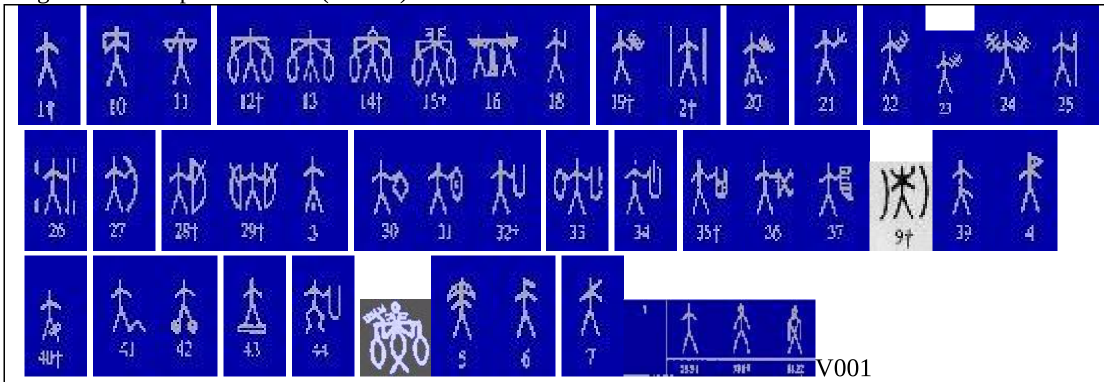
Standing person with horns and bovine features (hoofed legs and/or tail). **d.hagara_m** 'thigh' (G.); rebus: **d.han:gar** 'blacksmith' (H.)

m1653 ivory plaque  1905 

> **ten:go ten:gon** = to assume responsibility to appoint (Santali) [The rebus representation of ‘standing person’ pictograph can thus be interpreted as a functionary related to the ligatured pictograph (and related substantive rebus)].

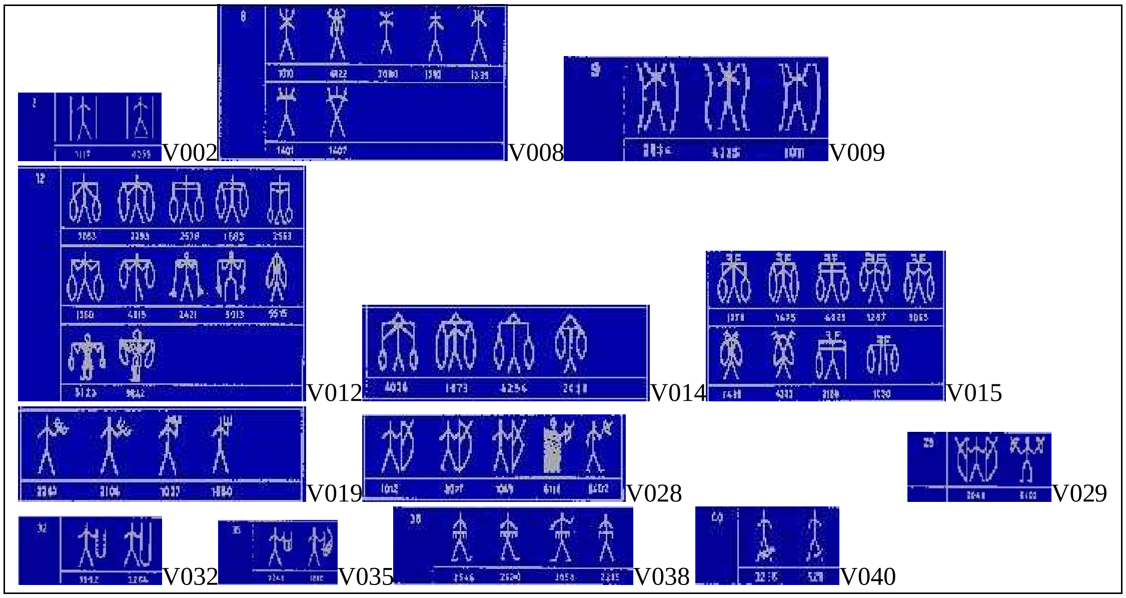
ten:go, ten:gon = to stand, to stand still, to assume an upright or perpendicular position, to raise to an upright position (Santali) ten:gen = to kill for sacrifice by cutting off the head with a knife (Santali) [Note the orthography of Sign 1 and many variants is that of a headless body.]

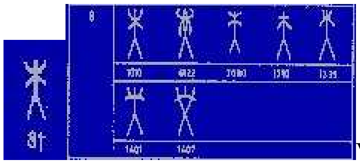
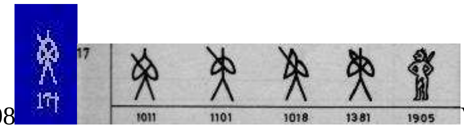
ten:gra hako = a species of fish (Santali)

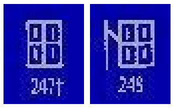


V001

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



V008 V017 **bhat.a** = a warrior (G.lex.) bhad.a a warrior; a hero; adj. Strong, mighty; opulent; an opulent person (G.lex.) **bhar.** = soldier (B.); warrior (G.); hero, brave man (Ku.); bhat.a = hired soldier (MBh.) pat.ai = army, weapons, battle (Ta.); pat.a = battle, army (Ma); pad.eyila = soldier (Ka.); pad.eval.a = a general (Ka.); pad.ava = fight, battle; pad.avalamu = van of an army; pad.ava_lu = commander of an army (Te.)

 **bata** = lattice work, inter-lacing (Santali.lex.)

Tempered metal with sharp edge!

bat.t.al, bat.t.alu, bat.t.ala, bat.la, bat.lu (Tbh. of vartula) a concave metal vessel: a bowl, a cup, a basin, a goblet (Ka.); vat.t.il (Ta.); vat.t.i, vat.t.ige (Ma.); bat.ud.i (Te.); vat.t.al.a a large cooking vessel; a brass pan (Ma.); vat.t.a = a large water-pot (Ta.); va_t.aga = a large metal dish; va_t.i_ a saucer-form vessel of metal; a half of a coconut shell; the pan of the knee (M.); bat.le = a sort of earthen dish or plate (Te.)

bat.i = a cup of metal; various sizes and shapes are distinguished by a prefixed word: **adhoili bat.i** = an eight-anna cup, of a middling size; **car ana bat.i** = a small size cup; baro ana bat.i = a cup originally costing twelve annas; **bin.d.i bat.i** = a cup with a rim below, to make it stand; chip bat.i = a small flattish cup or dish; **dul bat.i** = a cup made by casting, not by beating; **jam bat.i** = a large cup, mostly of **ka_sa_,** especially for drinking purposes; **khan:ka bat.i** = a cup with a flat rim (only the larger kinds, suitable for pouring out fluids; **khora bat.i** = cooking pot; **laua bat.i** = a cup similar to a lot.a, but without a neck; mi~r.u~ bat.i = a cup without an outstanding flat rim (khan:ka); **sunum bat.i** = a small cup used when anointing oneself with oil (Santali) **bat.i** (Desi) **bat.i** = a metal cup or basin; bhat.i = a still, a boiler, a copper; dhubi bhat.i = a washerman's boiler; jhuli bhat.i = a trench in the ground used as a fireplace when cooking has to be done for a

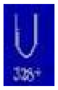
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

large number of people (Santali.lex.) bha~utic = a leaf cup, a cup made of leaves pinned together (Santali.lex.)

bha_tha_ quiver (OAw.H.); bha_tho, bha_to, bha_thr.o quiver (G.); bha_ta_ quiver (M.); bha_tad. id. (M.); bathi_ quiver (S.)(CDIAL 9424). Basket: vat.t.i basket made of palm-stem fibre; (ve_t.t.uvan- ma_n-r-acai corinta vat.t.iyum : Purana_. 33); round basket of grass, straw, leather or palm-leaves (Ma.); vat.t.ikai basket (Ta.); bat.t.i basket (Kod..); rattan basket (Tu.); vat.t.il quiver for arrows, basket, measure of capacity (Ta.)(DEDR 5231).

(10)**Sign 328 (323)** The pairing may be a way of counting two furnaces (**kut.hi**) for med. 'iron'.

kamat.ha = a water-pot; kaman.d.alu = ann ascetic's or religious student's water-pot, kun.d.ike (Ka.lex.) **kamat.hamu** = a water-jar (Te.lex.) **kamad.ha** = pot for curds; Baladeva; face (Pkt.lex.) cf. **mer.go** adj. rimless (vessels); having horns twisted backwards,buffalo) (Santali)

 (58) **Sign 95 (64)**

pon, ponea, ponon = four (Santali)

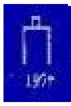
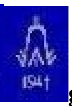
Rebus: pon, hon = a gold coin, the half of a varaha (Ka.); honnu = gold (Ka.); ponnu (Te.); **pon-, por-** = metal, gold, luster, beauty (Ta.); pol = gold (Ma.) The pair: **pon bat.hi** (gold furnace).

Sign 112 is composed of four and three: pon, ponea, ponon = four (Santali)

Rebus: **pon-** = metal (Ta.)

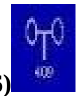
rakha = three (G.); tebr.a = three (G.)

Rebus: ran:ku = tin (Santali) ta_mbra = copper (Ka.)

**gat.a** = a small stream or water course (Santali) gat.t.u = a shore, a bank; a dam, embankment, dike (Te.) kat.t.a_ platform (Kol.); kat.t.a bund of field, dam, dike (Nk.)(DEDR 1147).

Rebus: Ingot: **gat.t.i ban:ga_ru** = gold in ingots or bars (Te.) kat.t.i = clod, lump (Ta.); solid, ingot (Ma.); kat.y solid lump (Ko.); gad.d.a = lump, mass, clod (Te.)(DEDR 1148). kad.rna_ to congteal (Kur.); kat.hina hard, firm (Skt.)(CDIAL 2650). kat.hara, kat.hura, kat.hora hard (CDIAL 2651) kad.d. to be hard, severe (DhP.)(CDIAL 2657). gat.i = nodular limestone; gat.i cun = lime made from nodular limestone (Santali)

Thus pairing with **Sign 112**, the pair of signs can be read as: gold (**pon**) or tin (**rakha**) ingot (**gat.t.i**).

(17) **Sign 409 (26)**

Rebus: **mo~r.e~** = five (Santali)

Grapheme: *mon.d.* the tail of a serpent (Santali)

Sign 409: glyph: cart**: gad.i** 'cart' (Santali)

gat.t.i = ingot, as in: gat.t.i-ban:ga_ramu = gold ingot (Te.) Paired with the glyph denoting 'five', the epigraph may read: five metals (alloy)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

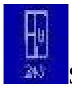
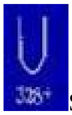
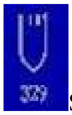
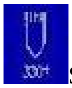
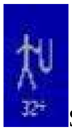
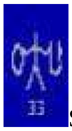
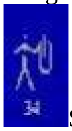
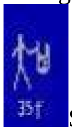
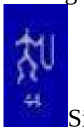
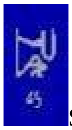
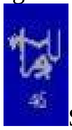
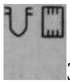
(67) (78)
mer.go = rimless vessels (Santali)

min.d.a = naligan.d.lapa_mu, nalikiri, naliki_cu = the greenish house lizard with a scarlet tail (Te.lex.) [Note the glyph of lizard (or alligator?) dominating a group of animals on tablets in bas relief]

Rebus: **med.** iron, iron implements (Ho.) *me~rhe~t* 'iron'; *me~rhe~t icena* 'the iron is rusty'; *ispat me~rhe~t* 'steel', *dul me~rhe~t* 'cast iron'; *me~rhe~t khan.d.a* 'iron implements' (Santali) (Santali.lex.Bodding)

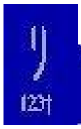
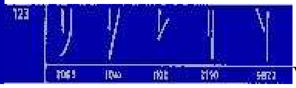
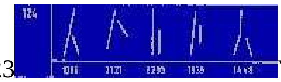
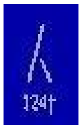
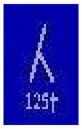
Alternative: **luiha** = an iron vessel or pot used for cooking and other purposes (Santali) Rebus: **luhui** = iron-stone sand; iron obtained by washing the sand of river beds and nallahs (Santali)

The pairing sign: **a~s** = scales of fish (Santali) **ayas** = metal (RV)[18]

bat.i = rimless vessel.[19] Sign 243 Sign 328 Sign 329 Sign 330 Sign 218
Sign 32 Sign 33 Sign 34 Sign 35 Sign 44
Sign 45 Sign 46
m0459Bt 3225

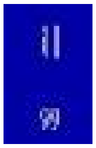
hadi = a layer of stone or brick in the ground (Ka.); **padre** a layer (Ka.); **paduru** = id., stratum (Tu.)(DEDR 3915). [Note glyph of ringstones on pillar on tablets in bas-relief.]

Substantive: **patam** = sharpness (as of the edge of a knife)(Ta.); padm (obl. Padt-) temper of iron (Ko.); pada = keenness of edge or sharpness (Ka.); **hada** = sharpeness (as of a knife), forming (as metals) to proper degree of hardness (Tu.); panda_ sharpness (Go.); padanu, padunu = sharpness, temper (Te.); padnu = sharpening (of knife by heating and hammering)(Kond.a); pato = sharp (as a blade); **patter** = to sharpen (Malt.)(DEDR 3907).

V123V124   **badhi** = 'to ligature, to bandage, to splice, to join by successive rolls of a ligature' (Santali) **bata_** bamboo slips (Kur.); **bate** = thin

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

slips of bamboo (Malt.)(DEDR 3917). Ligature! **badhi!** This becomes a characteristic feature of the orthography of epigraphs.



Two short linear strokes on the upper register [Frequency: 99]

Mohenjodaro gold pendant is made from a hollow cylinder with soldered ends and perforated point. Museum No. MM 1374.50.271; Marshall 1931: 521, pl. CLI, B3.

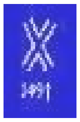
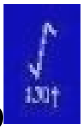
Naha_li_ **baddi_** = ox ; **pa_d.o_** = bull (Sikalga_ri_, mixed Gypsy language.)(CDIAL 9176). **bal.ad** = an ox; a bullock; a bull (G.lex.) baredi_ = herdsman (H.); baldi_ = oxherd (P.); baldiya_ cattle-dealer (Ku.)(CDIAL 9177). bali**varda** = ox, bull (TBr.); baleda_, baled = herd of bullocks (L.); baledo (S.); bald, baldh, balhd = ox; baled, baleda_ = herd of oxen (P.); bahld, bale_d = ox (P.); balad, bald = ox (Ku.); **barad** (N.); balad(h) (A.); balad (B.); bal.ada (Or.); **barad(h)** (Bi.); barad (Mth.); barad (Bhoj.);. bardhu (Aw.); balad, barad(h), bardha_ (whence baladna_ to bull a cow (H.); bal.ad (G.)(CDIAL 9176). **pa_r-al** = bull (Ta.)(DEDR 4020). **bare itat** = a bullock given at marriage by bridegroom to bride’s brothers (Santali.lex.) baro barabbar = opposite, face to face; baro, baron. = provisions, food rations, supplies (P.lex.) barotwa_la_ = a partner (K.)(P.lex.)

There is another semantic stream, **vad.d.e** (Telugu), **vad.d.haki** (Pkt.), [?***barad.a**] connoting, respectively, a digger of tanks (perhaps the same group of people who had the competence to createa rock-cut reservoir in Dholavira) and carpenter, mason.

To depict him pictorially, in a writing system, a backbone (**barad.o**) or a bull (**baradh**) or a kneeling adorant (**bharad.o**, 'devotee of S'iva') are depicted, since all these semantics are represented by a word which sounds similar to the word used to connote an artisan -- a mason, a carpenter, a worker in wood and metal: ***barad.o (vardhaki). barduga** = a man of acquirements, a proficient man (Ka.)

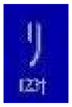
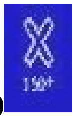
To add greater precision in the message conveyed , other pictorials -- as semantic determinants -- may be ligatured; for e.g. a trough may be shown in front of a bull; the trough is **d.han:gar**; a rebus representation of **d.han:gara, t.hakkura**, 'blacksmith'. A new principle in the writing system emerges: ligaturing as a means of conveying multiplicity of functions performed or alloys created, using multiplicity of ores and metals.

bat., bat.e = a road; bat. par.a = a highwayman, a spy (Santali.lex.) bhat.akavum [Skt. bhra_nta wandered fr. bhram to wander] to roam, to wander; bhat.aka_m pl. wanderings (G.lex.) **bhat.au** to go about, to go here and there, as a dog in heat (Santali.lex.) bha_t.iyo = a class of va_nia_s; a milkman; a vegetable-seller; bha_t.hela_ pl. a class of bra_hman.as (G.lex.) *dobat.ia* ‘cross roads, the junction of two roads’ (Santali) bat.oi traveller (Ku.); bat.ohi (N.); ba_t.oi, ba_t.ei (N.); bat.ohi_, bat.ohia_, bat.ohini (Mth.); bat.o(h)i_ (H.)(CDIAL 11367).

 (39) **Sign 130 (63)**

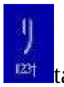
h172B Field Symbol 36 (10)

Sign 51 **kaca kupi** ‘scorpion’ (Santali) Rebus **kacc** = iron (Go.); **kan~cu** = bronze (Te.)

 (44) **Sign 150 (63)**

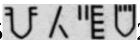
Sign 150 glyph: **tat.am** = road, path, route, gate, footstep (Ta.); **dad.d.a** road (Ir.); dar.v path, way (Ko)(DEDR 3024).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

tat.t.ai = mechanism made of split bamboo for scaring away parrots from grain fields (Ta.); **tat.t.e** = a thick bamboo or an areca-palm stem, split in two (Ka.)(DEDR 3042).

tot.xin, tot.xn goldsmith (To.); tat.t.a_n- gold or silver smith (Ta.); goldsmith (Ma.); **tat.t.e** = goldsmith (Kod.); tat.rava_~d.u = goldsmith or silversmith (Te.); *t.hat.t.haka_ra brassworker (Skt.)(CDIAL 5493).

bad.hi 'a caste who work both in iron and wood' (Santali)[20] **bar.ae** = a blacksmith; bar.ae kudlam = a country made hoe, in contrast to cala_ni kudlam, an imported hoe; **bar.ae** mer.ed – country smelted iron; **bar.ae** muruk = the energy of a blacksmith (Mundari.lex.) bar.ae = bad.ae (Santali.lex.) **bari_** = blacksmith, artisan (Ash.)(CDIAL 9464). The occurrence of **bari_** in Ash. (CDIAL 9464) and **bar.ae** in Mundari and of **vardhaka** in Skt. point to the early phonetic form: **bard.a**; semantic: worker in iron and wood, artisan. Thus, it is suggested that the depiction of the backbone, barad.o is rebus for **bard.a**, artisan. **barduga** = a man of acquirements, a proficient man (Ka.)

m11352140 Pict-50 Composite animal: features of an ox and a rhinoceros facing the standard device. This seems to indicate that the lexeme connoting the young bull may have be cognate with a lexeme connoting a boar. **badhia** = castrated boar, a hog; **bhator. sukri** = a huge wild boar with large tusks; rata sukri = a boar in hunting parlance; sukri kud.u = a boar; datela sukri = a wide boar (Santali.lex.) basa, **bara** (Has. Syn. of ekend.a, Nag.) = a male wild boar, whether living with one female (larger kind) or leading a herd (smaller kind) (Mundari.lex.)[21]

Glyph: *badhor*. 'a species of fish with many bones' (Santali)

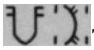
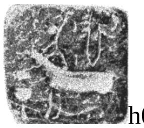
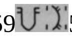
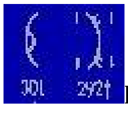
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Smelting furnace, kut.hi

kut.hi ‘a furnace for smelting iron ore to smelt iron’; *kolheko kut.hieda* koles smelt iron (Santali) **kut.hi, kut.i** (Or.; Sad. **kot.hi**) (1) the smelting furnace of the blacksmith; **kut.ire bica duljad.ko talkena**, they were feeding the furnace with ore; (2) the name of **e_kut.i** has been given to the fire which, in lac factories, warms the water bath for softening the lac so that it can be spread into sheets; to make a smelting furnace; **kut.hi-o** of a smelting furnace, to be made; the smelting furnace of the blacksmith is made of mud, cone-shaped, 2’ 6” dia. At the base and 1’ 6” at the top. The hole in the centre, into which the mixture of charcoal and iron ore is poured, is about 6” to 7” in dia. At the base it has two holes, a smaller one into which the nozzle of the bellow is inserted, as seen in fig. 1, and a larger one on the opposite side through which the molten iron flows out into a cavity (Mundari.lex.) kut.hi = a factory; lil kut.hi = an indigo factory (H.kot.hi)(Santali.lex.Bodding) kut.hi = an earthen furnace for smelting iron; make do., smelt iron; kolheko do kut.hi benaokate baliko dhukana, the Kolhes build an earthen furnace and smelt iron-ore, blowing the bellows; tehen:ko kut.hi yet kana, they are working (or building) the furnace to-day (H. kot.hi_)(Santali.lex.Bodding) **kut.t.hita** = hot, sweltering; molten (of tamba, cp. uttatta)(Pali.lex.) uttatta (ut + tapta) = heated, of metals: molten, refined; shining, splendid, pure (Pali.lex.) kut.t.akam, kut.t.ukam = cauldron (Ma.); kut.t.uva = big copper pot for heating water (Kod.)(DEDR 1668). gudga_ to blaze; gud.va flame (Man.d); gudva, gu_du_vwa, guduwa id. (Kuwi)(DEDR 1715). da_ntar-kut.ha = fireplace (Sv.); **ko_ti** wooden vessel for mixing yeast (Sh.); kot.ha_ house with mud roof and walls, granary (P.); **kut.hi_** factory (A.); kot.ha_ brick-built house (B.); kut.hi_ bank, granary (B.); **kot.ho** jar in which indigo is stored, warehouse (G.); **kot.hi_** lare earthen jar, factory (G.); kot.hi_ granary, factory (M.)(CDIAL 3546). kot.ho = a warehouse; a revenue office, in which dues are paid and collected; kot.hi_ a store-room; a factory (G.lex.) **kod.** = the place where artisans work (G.lex.)

kor.o Has. Syn. of ged.e, ger.e Nag. A domesticated duck, *anas domestica* (Mundari.lex.) ged.e = a duck (Santali.lex.) ka_ran.d.avamu = a sort of duck (Te.lex.) ka_ran.d.ava = a duck (G.lex.)

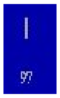
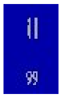
phut.a = the hood or expanded neck of a snake (Skt.)

Lothal056 7100 h0595120 **kut.i** = the eyebrows (Santali.lex.)

put.a = an eyelid (Ka.)

put.a = the purifying or calcining of metals etc. by fire (Tu.lex.); put.amu = refining a metal; calcining, calcinations (Te.) put.a = crucible; put.akke ha_ku = to put into a crucible in order to prepare drugs; to refine, as metals (Ka.); put.avikku = to apply fire in order to refine metals; to burn (Ka.lex.) **put.-** (-t-) to set fireto, kindle (Pe.); put.pa (put.t-), pur.pa (pur.t-) to roast (Kui)(DEDR 4260).

put.abhedana = a town, a city (Ka.lex.)

  **kut.i** = a slice, a bit, a small piece (Santali.lex.Bodding)

sal stake, spike, splinter, thorn, difficulty (H.); **sal.i_** small thin stick; **sal.iyo** bar, rod, pricker (G.); **s'ol.** reed (Kho.)(CDIAL 12343). **salleha, selleha** = splinter (Ka.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

sal ‘workshop’ (Santali); **s’a_la** id. (Skt.)

bed.a ‘either of the sides of a hearth’ (G.) **bhin.d.a** a lump, applied especially to the mass of iron taken from the smelting furnace (Santali)

hako = axe (Santali)

hak to split (Bahnar); hak to tear; jik to cut (Stieng); gc? axe (Bonda) cf. paku (pakuv-, pakk-) to be split, divided (Ta.) (DEDR 3808).

hako, bed.a hako a fish (Santali)

kut.he = leg of bedstead or chair (Santali.lex.)

kampat.t.tam coinage coin (Ta.); *kammat.t.am kammit.t.am* coinage, mint (Ma.); *kammat.a* id.; *kammat.i* a coiner (Ka.)(DEDR 1236)

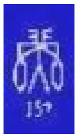
kut.i, kut.hi, kut.a, kut.ha a tree (Kaus'.); **kud.a** tree (Pkt.); **kur.a_** tree; **kar.ek** tree, oak (Pas;.)(CDIAL 3228). **kut.ha, kut.a** (Ka.), kudal (Go.) kudar. (Go.) **kut.ha_ra**, kut.ha, kut.aka = a tree (Skt.lex.) **kut., kurun:** = stump of a tree (Bond.a); khut. = id. (Or.) **kut.amu** = a tree (Te.lex.)

Water-carrier glyph[22]

Seal impression, Ur (Upenn; U.16747); [After Edith Porada, 1971, Remarks on seals found in the Gulf States. *Artibus Asiae* 33 (4): 331-7: pl.9, fig.5]; Parpola, 1994, p. 183; water carrier with a skin (or pot?) hung on each end of the yoke across his shoulders and another one below the crook of his left arm; the vessel on the right end of his yoke is over a receptacle for the water; a star on either side of the head (denoting supernatural?). The two celestial objects depicted on either side of the water-carrier’s head can be interpreted as a phonetic determinant: **ko_l.** ‘planet’. The whole object is enclosed by 'parenthesis' marks. The parenthesis is perhaps a way of splitting of the ellipse (Hunter, G.R., *JRAS*, 1932, 476). An unmistakable example of an 'hieroglyphic' seal. enclosure signs of the field: Rebus: **kol =** metal (Ta.) Two ko_l. ‘planets’; rebus: **kut.hi kol kin** = two furnaces for metal vessels.

( ) **kut.ila** = bent, crooked (Skt.) kut.ila (Skt. Rasaratna samuccaya, 5.205) Humpbacked kud.illa (Pkt.)

( ) The glyph of a curved line when mirrored becomes a ligature, an enclosure to other glyphs.

Sign 12 (80) **kut.i** ‘water carrier’; rebus: **kut.hi** ‘furnace’  is a ligature of kan.d.a kanka ‘rim of pot’ + kut.i ‘water carrier’. Rebus: kan.d.a kanka ‘altar for copper’ + kut.hi ‘metal furnace’.

Graphemes, i.e. glyphs which could be rebus for **kol** ‘metal’: **kol.i_** = water carrier (M.)

xola_ = tail (Kur.); qoli = id. (Malt.)(DEDR 2135). **kolli** = a fish (Ma.); koleji id. (Tu.)(DEDR 2139).

ko_la_ flying fish, exocaetus, garfish, belone (Ta.) ko_la_n, **ko_li** needle-fish (Ma.)(DEDR 2241). **ko_li** = a stubble of jo_l.a (Ka.) ko_le a stub or stumpof corn (Te.)(DEDR 2242).

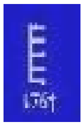
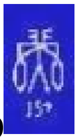
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

ko_l.i = banyan, fig (Ta.Ma.); **go_l.i** fig (Ka.); banyan (Tu.)(DEDR 2254).

ko_l raft, float (Ta.Ka.); kola boat, raft (Skt.BHSkt.); kulla (Palli)(DEDR 2238)

ko_la decoration (Ka.); ko_lam = form (Ta.Ma.)(DEDR 2240).

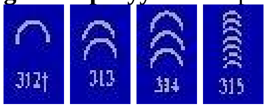
Rebus: **kol** = metal (Ta.)

 (26) **Sign 15 (126)** 

Sign 15: Ligature: kut.i 'water-carrier' + kanka 'rim of pot'; rebus: kut.hi 'furnace' + kan- 'copper

Pairing glyph: kan:kata = comb (Te.) Rebus: kan:gar = portable furnace (K.)

gad.d.a proyyi = a fireplace or hearth with 3 or 4 inverted hemispherical clods placed on it (Te.)

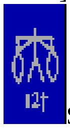


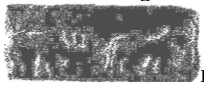
kut.ila, katthi_l = bronze (8 parts copper and 2 parts tin) [cf. a_ra-ku_t.a, 'brass' (Skt.)]

Thus the ligatured glyph with enclosing 'brackets' connotes a bronze furnace: **kut.ila kut.hi**

The vivid use of the Sign 15 as a pictograph is found on m-1405: a person stands at the centre, points to a short-horned bull facing a trough, with his right hand and to the Sign 15, with his left hand.

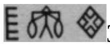
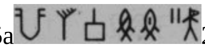
m1405At Pict-97: Person standing at the center pointing with his right hand at a bison facing a trough, and with his left hand pointing to the sign
[*bali* 'bull'; *bali* 'iron'; *tagar.* 'trough'; *tagara* 'tin'; *kan.d.kanka* 'rim of pot'; **kan- kand.** 'copper-furnace'; **kut.i** 'woman water-carrier' (Te.); rebus: **kut.hi** = furnace; alternative: *kol.i* 'water-carrier'; *kolhe* 'smelters of iron'.]

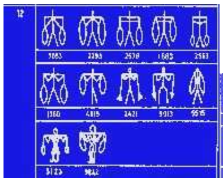
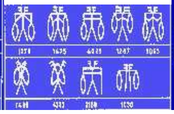
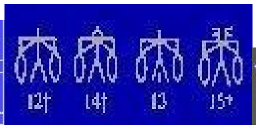
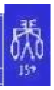
Sign 12 **kut.i** = a woman water-carrier (Te.) kut.i = to drink; drinking, beverage (Ta.); drinking, water drunk after meals (Ma.); kud.t- to drink (To.); kud.i to drink; drinking (Ka.); kud.i to drink (Kod.); kud.i right, right hand (Te.); kut.i_ intoxicating liquor (Skt.)(DEDR 1654).
Obverse: A tiger and a rhinoceros in file.

m1405Bt Pict-48 A tiger and a rhinoceros in file [*kha~g* 'rhino'; rebus: *kan:gar* 'furnace'; *kol* 'tiger'; rebus: *kolhe* 'smelters of iron'.] **kol** metal (Ta.) **kol** = pan~calo_kam (five metals) (Ta.lex.) Thus, the entwined figures of 3 or more tigers may connote an alloy of 3 or more metals.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

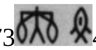
The person standing between the sign 15 and the bull facing a trough has his arm raised: *er-aka*, 'raised arm' = rebus: copper. The bull (**d.an:gra**) facing a (phonetic determinant) trough (**d.an:gra**) is rebus: blacksmith. Thus the inscription on m1405At can be read as: **d.an:gra er-aka kan.d kanka kut.i** = rebus: blacksmith copper gold furnace of the smelter. [*kan.d.* = a furnace, altar (Santali.lex.)]

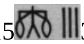
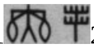
m0670‼	m0874 3092
m0035a2333	

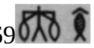
  Sign 15 is a ligature of Sign 12 and Sign 342 Thus, Sign 15 can be orthographically read as: kola, kol.i = water-carrier; khan.d.a kanka = rim of a jar. The rebus representation, i.e. homonyms could be: kanaka = gold; **kolhe** = smelters of iron.]

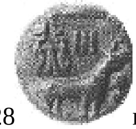
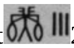
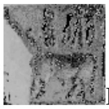
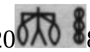
2841 Is the Sign 12 (a component of the ligatured Sign 15) a synonym of the tiger (jackal), kola? If so, the ligatured sign 15 can be read as: kan.d. kanka kol.i = short-neck of jar + water-carrier = rebus: gold furnace of the smelter (kol) The person standing between the sign 15 and the bull facing a trough has his arm raised: er-aka, 'raised arm' = rebus: copper. The bull (d.an:gra) facing a (phonetic determinant) trough (d.an:gra) is rebus: blacksmith. Thus the inscription on m1405At can be read as: d.an:gra er-aka kan.d kanka kol.i = rebus: blacksmith copper gold furnace of the smelter.

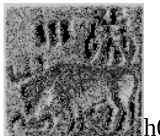
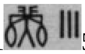
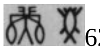
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

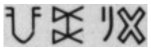
h0734617 [An orthographic representation of a water-carrier].

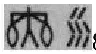
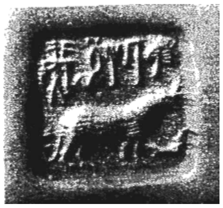
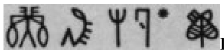
m0838 2368 m02153081 m07412421

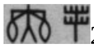
m0969 2239 Lothal042 m0188 1287 m0229

3075 m0328  m0429 Text2862 Kalibangan0208047

h0815063 m0995 Chanhudaro21a 6209 The second sign is a ligature: carrying pole with slings + rim of pot: *ka_ca + kan.d.kankha* (Substantive: iron spit + furnace)

Chanhudaro Seal obverse and reverse. The ‘water-carrier’ and X signs of this so-called Jhukar culture seal are comparable to other inscriptions. Fig. 3 and 3a of Plate L. After Mackay, 1943.  6120

Kalibangan049 8013  m0741

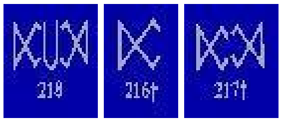
2421 5123 9851 Telloh

9842 Ur

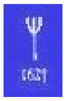
[Pierre de talc. Louvre, AO 9036. P. Amiet, Bas-relliefs imaginaries de l’Orient ancien, Paris, 1973, p. 94, no. 274…ils proviendrait de Tello, l’ancienne Girsu, une des cites de l’Etat sumerien de Lagash. Musee National De Arts Asiatiques Guimet, 1988-1989, *Les cites oubliees de l’Indus Archeologie du Pakistan*.]

kut.amu = a tree (Te.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



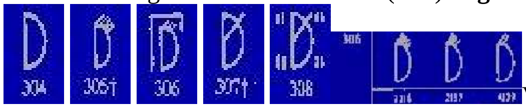
kamat.ha = a crab, a tortoise (G.lex.) kamat.ha = tortoise (Skt.) kamad.ha, kamat.ha, kamad.haka, kamad.haga, kamad.haya tortoise (Pkt.lex.) **kamat.hamu** = a tortoise; kamat.hi = a female tortoise (Te.lex.)

 (10) **Sign 28 (50)**

Ligature on sign 28: dhanus 'bow' (Skt.) dhan.i_ = the owner, the possessor (G.)

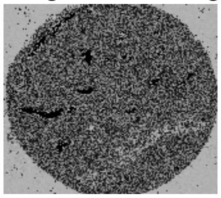
Glyph: **kama_t.hiyo** = archer; **ka_mat.hum** = a bow; ka_mad.i_, ka_mad.um = a chip of bamboo (G.) **ka_mat.hiyo** a bowman; an archer (Skt.lex.)
Rebus: **kamat.ha_yo** 'a learned carpenter or mason, working on scientific principles' (Santali) **kammat.a** = mint, gold furnace (Te.)

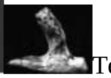
Pairing sign: kolmo = graft; rebus: kolme = furnace (Ka.)
Altenative: t.agara = *taberna mntana* (Skt.) **t.agromi** = tin metal alloy (Kuwi)

V305 V307 **ka_m.t.hi,** Glyph: *kamat.ha* bamboo (Skt.) *ka_ca* bhangi pole (Kuwi); *ka_njui_* (pl. *ka_ska*) a banghi (Kuwi); *ka_sa* the shaft of a *ka_vr.i* (Kond.aj. Kui); *ka_nj* carrying yoke (Kond.a); *ka_nju* id. (Kui.Kuwi); *ka_ca, ka*_ja (Skt.); *ka_ca*, *ka_ja* (Pkt.); *ka_a* a yoke to support burdens (Pkt.); *ka_* pole with ropes hung on each end, used to carry loads on the shoulder (Ta.); *ka_gad.i*, *ka_vad.i* bamboo lath or pole provided with slings at each end for the conveyance of pitchers (Ka.); *ka_nja_na_, ka_nj* to carry on the shoulders (Go.); *ka_vat.i* pole used for carrying burdens (Ta.); *ka_vu* to carry on the shoulder, bear anything heavy on the arms (Ta.); *ka_vu*, *ka_vat.i* split bamboo with ropes suspended from each end for carrying burdens (Ma.); *ka_vad.i* id. (Tu.); *ka_vat.i*, *ka_vad.i* id. (Te.); *ka_vuka*, *ka_vikka* to carry on a pole (Ma.); *ka_var.i* carrying yoke (Kol.); *ka_vr.i*, *ka_ver.i*, *ka_vir.(i); ka_har.i* (Go.); ka_vr.i id. (Mand. Pe.); *ka_vad.a* id. (Pkt.); *ka_vad.ia* one who carries burdens with yoke (Pkt.); *ka_war*. carrying yoke (H.)(CDIAL 3009, 3011, 2760; DEDR 1417).**ka_mat.hum** [Skt. kamat.ha a bamboo] a bow (G.lex.) kamat.ha = bamboo; kambi = shoot of bamboo; karmuka = bow (Mn.); kamad.ha, kamad.haya = bamboo (Pkt.); ko_ro = bamboo poles (Bhoj.); ka_mro bamboo, lath, pieces of wood (N.); **ka_mvari** bamboo pole with slings at each end for carrying things (OAw.); ka~_war, ka_war., ka_war., ka_war (H.); ka_var. (G.); ka_vad. (M.); ka_vad.ia, kavva_d.ia one who carries a yoke (Pkt.); ka~_war.i_, **ka~_war.iya_** (H.); ka_var.iyo (G.); ka_va_t.hi_ carrying pole (S.); **ka_va_t.hyo** the man who carries it (S.); ka_mar.a_, ka_mur.a_ rafters of a thatched house (Or.); ka_mr.u~ chip of bamboo; ka_mar.-kot.iyu~ = bamboo hut (G.); ka_m.t.ha_ bow (B.); ka_mt.hu~ (G.); kamt.ha_, kamt.a_ bow of bamboo or horn (M.); ka_mt.hiyo archer (G.); kaba_ri flat piece of bamboo used in smoothing an earthen image (A.); ka~_bi_t., **ka~_bat.,** ka_~bt.i_, ka_mat., ka_mt.i_, ka_mt.hi_, ka_ma_t.hi_ split piece of bamboo etc., lath (M.)(CDIAL 2760). **ka_jaha_raka** = bearer of a carrying-pole (Pali); ka_ha_ra = carrier of water or other burdens (Pkt.)(CDIAL 3011). ka~d.i, ka~_d.i, ka_d.i (Te.), **ka_har.i**= carrying yoke (Go.); ka_n~, ka~_j, ka_nj (Ga.) xa_xo_ = triangular frame made by folding a bamboo stem used in pairs for carrying logs (Kur.); ka_nju_ (pl. ka_ska) = a banghi, ka_nju (Pl. ka_ska) carrying yoke (Kuwi) Glyph: (palanquin bearer) *ka_ma_t.i_* [*komat.i_* (M.)] a caste of hindus who are generally palanquin bearers and labourers (G.); *ka_m* work (G.) Substantive: *ka_mat.ha_yo* a learned carpenter or mason, working on scientific principles (G.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Thigh of a sitting person. urseal9Seal; BM 122945; U. 16181; dia. 2.25, ht. 1.05 cm; Gadd PBA 18 (1932), p. 10, pl. II; each of four quadrants terminates at the edge of the seal in a vase; each quadrant is occupied by a naked figure, sitting so that, following round the circle, the head of one is placed nearest to the feet of the preceding; two figures clasp their hands upon their breasts; the other two spread out the arms, beckoning with one hand. If the orthographic intent is to image a 'thigh'; the homonyms are: **ukka_** 'thigh' (RV); **ukka_** furnace (Pkt.) Alternative: **ku_t.i** = hip (Kui); **ku_t.u** = hip (Tu.); **kut.a** thigh (Pe.)(DEDR 1885); rebus: **kut.hi** = furnace (Santali)



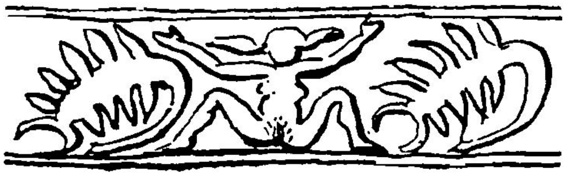

Terracotta female, Gumla; Terracotta miniature plough; Jawaiwala, Bahawalpur (Weiner, 1984, Figs. 187 and 188)

ukka_ 'thigh' (Vedic) **ukkalai** the hips (Ta.); **ukkal** (Ma.); **okkal, okkalai** hip side of the body (**Par..a. 290**); **okku** (Ma.)(Ta.lex.)

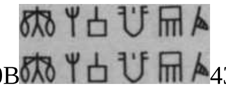
ukka_ 'furnace' (Skt.) was- = fireplace (To.)(DEDR 2857).

The most emphatic rebus representation of the pubes of a woman yields the homonym **kut.hi**

See http://www.hindunet.org/saraswati/smith/blacksmith.htm A symbolism of a woman spreading her legs apart, which recurs on an SSVC inscribed object. **Cylinder-seal impression from Ur showing a squatting female.** L. Legrain, 1936, *Ur excavations, Vol. 3, Archaic Seal Impressions*. [cf. Nausharo seal with two scorpions flanking a similar glyph with legs apart – also looks like a frog]. Fig. 95; Susa, stamp seal of bitumen compound, Louvre, MDAI, 43, no. 1725; a woman shown full-face is squatting with legs apart, possibly on a stool. (A similar image of a woman with legs spread out occurs on an Ur seal impression and on a Mohenjodaro tablet). (Not illustrated).



h180A

h180B

4304 Tablet in bas-relief h180a Pict-106: Nude female figure upside down with thighs drawn apart and crab (?) issuing from her womb[23]; two tigers standing face to face rearing on their hindlegs at L. Pict-92: Man armed with a sickle-shaped weapon on his right hand and a cakra (?) on his left hand, facing a seated woman with disheveled hair and upraised arms.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

kut.hi = pubes. **kola** ‘foetus’[12] [Glyph of a foetus emerging from pudendum muliebre.] **kut.hi** = the pubes (lower down than pan.d.e) (Santali.lex.) kut.hi = the womb, the female sexual organ; sorrege kut.hi menaktaea, tale tale gidrakoa lit. her womb is near, she gets children continually (H. kot.hi_, the womb)(Santali.lex.Bodding) ko_s.t.ha = anyone of the large viscera (MBh.); kot.t.ha = stomach (Pali.Pkt.); kut.t.ha (Pkt.); kot.hi_ heart, breast (L.); kot.t.ha_, kot.ha_ belly (P.); kot.ho (G.); kot.ha_ (M.)(CDIAL 3545). **kottha** pertaining to the belly (Pkt.); kotha_ corpulent (Or.)(CDIAL 3510). Kot.ho [Skt. kos.t.ha inner part] the stomach, the belly (G.lex.)

The **bunch of twigs** = **ku_di_, ku_t.i_** (Skt.lex.) ku_di_ (also written as ku_t.i_ in manuscripts) occurs in the Atharvaveda (AV 5.19.12) and Kaus'ika Su_tra (Bloomsfield's ed.n, xliv. cf. Bloomsfield, American Journal of Philology, 11, 355; 12,416; Roth, Festgruss an Bohtlingk, 98) denotes it as a twig. This is identified as that of Badari_, the jujube tied to the body of the dead to efface their traces. (See *Vedic Index*, I, p. 177).

khut.i Nag. (Or. **khut.i_**) diminutive of **khun.t.a**, a peg driven into the ground, as for tying a goat (Mundari.lex.) khun.t.i = pillar (Santali.lex.)[24]

Yogi with bangles, headdress and seated on a hoofed platform: silver smithy, metal kiln

In the corpus of inscribed objects of the Sarasvati Sindhu Civilization, there are 7 inscribed objects showing a seated person. There are 13 inscribed objects depicting a standing, horned person, sometimes ligatured to the hindpart of a bull (bovine) with a tail.

jhoka_= one whose business is to feed a furnace or an oven (P.); **jokha** = to measure; **lekha jokha emok hoyoktama** = you must give an account (Santali) **jhokn.** = to cast to throw fuel into a furnace; jhokh = a flame (P.lex.) *jo_* to put in insert (Pe.); *ju_* id. (Mand.)(DEDR 2868). *jokka_na_*, *johka_na_* to kill (Go.); *soka* to strike at (Kui)(DEDR 2831).

cokka-k-kat.t.i-vel.l.i, cokkavel.l.i pure silver (Ta.); cokkabel.l.i id. (Ka.); cokkabol.l.i id. (Te.); **cokku** gold; cokuca_ < sogsa_ pinchbeck, gold-like alloy of copper and zinc (U.); cokucu refinement, neatness; fineness, as of work; superior quality (Ma.)

cokho = sharp, keen-edged; coega = sharp, pointed (Santali.lex.)

jo_gat.t.e = **sitting cross-legged (Tu.lex.)**

cogu = food for birds (S.); cogga_ (L.); food for birds (P.)(CDIAL 4920).

coko, cocko = the female organ, human and bestial; coe = part of female private member, clitoris (Santali.lex.) coccal, cocalu = the first pregnancy; the first birth, the first offspring (Ka.lex.)

Kalibangan076A **Kalibangan076B** **Lothal050**
1338

[12] **ku_ti** = pudendum muliebre (Ta.); posteriors, membrum muliebre (Ma.); ku.0y anus, region of buttocks in general (To.); ku_di = anus, posteriors, membrum muliebre (Tu.)(DEDR 188). ku_t.u = hip (Tu.); kut.a = thigh (Pe.); kut.e id. (Mand.); ku_t.i hip (Kui)(DEDR 1885). gu_de prolapsus of the anus (Ka.Tu.); gu_da, gudda id. (Te.)(DEDR 1891).

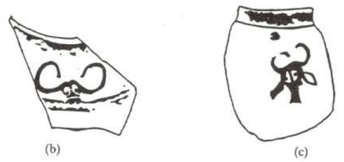
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

kamat.amu, kammat.amu = **a portable furnace for melting precious metals;** kammat.i_d.u = **a goldsmith, a silversmith (Te.lex.)** ka~pr.aut., kapr.aut. **jeweller's crucible made of rags and clay (Bi.); kapr.aut.i_ wrapping in cloth with wet clay for firing chemicals or drugs, mud cement (H.)[cf. modern compounds: kapar.mit.t.i_ wrapping in cloth and clay (H.); kapad.lep id. (H.)](CDIAL 2874).** kapar-mat.t.i **clay and cowdung smeared on a crucible (N.)(CDIAL 2871).**

kampat.t.tam **coinage, coin (Ta.);** kammat.t.am, kammit.t.am **coinage, mint (Ma.);** kammat.i **a coiner (Ka.)(DEDR 1236)** kammat.a = **coinage, mint (Ka.M.)** kampat.t.a-k-ku_t.am **mint;** kampat.t.a-k-ka_ran- **coiner;** kampat.t.a- mul.ai **die, coining stamp (Ta.lex.)**

Glyph: kamad.ha, kamat.ha, kamad.haka, kamad.haga, kamad.haya = **a type of penance (Pkt.lex.)**

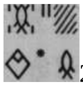
(a)


(b) (c)

Buffalo's horns. Gumla, NW Frontier province. After Sankalia 1974: 354, fig. 88: b (=b), c (=c)

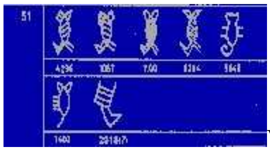
(b) (c)

Buffaloes sitting with legs bent in yogic a_sana. Susa Cc-Da, ca. 3000-2750 BC, proto-Elamite seals: (a-c) After Amiet 1972: pl. 25, no. 1017 (=a); and Amiet 1980a: pl. 38, nos. 581-2 (b-c)

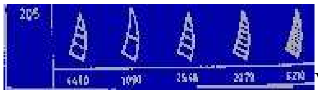
m0305AC  2235 Pict-80: Three-faced, horned person (with a three-leaved pipal branch on the crown with two stars on either side), wearing bangles and armlets. Two stars adorn the curved buffalo horns of the seated person **with a plaited pigtail**. The pigtail connotes a pit furnace:

Substantive: *sund* 'pit (furnace)'; *sum, sumbh* a mine, a pit, the opening into a mine, the shaft of a mine; sum bhugak the entrance to a mine, pit's mouth (Santali). s*un.d.i* a semi-hinduised aboriginal caste; this caste are the distillers and liquor sellers; *sun.d.i gadi* a liquor shop (Santali) *cun.d.* to boil away (Ko.); *sun.d.u* to evaporate (Ka.); *cun.d.u* to be evaporated or dried up (Te.); *s'un.t.hi* to become dry (Skt.)(DED 2662).

Glyph: *su_nd gat.* knot of hair at back (Go.); *cundi_* the hairtail as worn by men (Kur.)(DEDR 2670).


V051 Sign 51 might have been normalised from an early variant which depicts a mouse or rat seen from the back. There could be two glyphs involved: one, that of **kaca** 'scorpion'; rebus: **kacc** 'iron' and the second, that of rat **sun.d.a**; rebus: **sun.d.** 'pit furnace'. **sun.d.a** musk-rat (Ka.)(DEDR 2661)]. **s'un.d.i-**mu_s.ika_, s'un.d.a-mu_s.ika_ musk-rat (Skt.)(CDIAL 12517).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

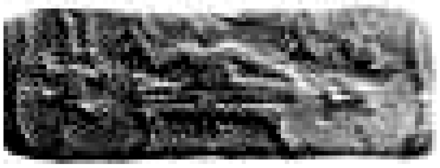
V205 Sign 205 and variants: **son.d.a** = a tusk, as of wild boar, elephant (Santali.lex.) **sonda** = a billhook, for cutting fire wood (Santali.lex.)

An antelope – **mlekh** 'goat' (Br.); rebus: **mleccha** 'copper' (Skt.); **melakku** 'copper' (Pali)-- is shown with a seven-pointed star around a dotted-circle on tablet h349A, h349B

suk'erika 'stars' (Kuwi)(DEDR 2646) *sukar, sukor* 'the planet vennus as evening star' (Santali) Rebus: *sokol* 'fire' (Santali) *bar* 'two'; Rebus: *bara* 'oven'
Seated person: *hasani* 'fireplace'; *asani* 'seated'

Furnace or forge of a smith; a goldsmith's smelting pot; torch: **ukka_** (Vedic ulka_ and ulkus.i_; Latin volcanus; Old Irish olca_n to be fiery) firebrand, glow of fire, torch; tin.-ukka_ firebrand of dry grass; **ukka_** a furnace or forge of a smith; a meteor; ukka_-dha_ra a torch-bearer; ukka_-pa_ta falling of a firebrand, a meteor; ukka_-mukha the opening or receiver of a furnace, a goldsmith's smelting pot = **kamma_r'uddhana** (Pali); ukka_cana_ enlightening, clearing up, instruction; ukka_cita enlightened, made bright; (fig.) or cleaned, cleared up; ukka_ceti to bale out water, to empty by means of buckets (Pali)(Pali.lex.) Image: fireplace: cf. cu_l.ai kiln, furnace, funeral pile (Ta.); culli_, ulli_ fireplace (Pkt.)(DEDR 2709)(CDIAL 4879). **huko, hukko** [Hem. Des. **ukka_** fr. Skt. **ulka_** a firebrand; Arabic **hukka** a casket] a smoking apparatus; a *hukkah* (G.) **huka** the hooka, the hubble bubble (Santali) **sukar** evening star (Santali.lex.) cukkai star (Ta.); cukka star (Te.); cikke, cikki star (Ka.); sukka star (Kol.); cukka (c = ts) id. (Nk.); cukkin id. (Nk.); cukka id. (Pa.); sukka star (Ga.); sukkum, huko, hukka, hukkom, hukka, ukkum, ukka, ukam id. (Go.); suka id. (Kond.a); huka (pl. -n) id.; hukeran, hukerin (pl. only recorded) stars (Pe.); hukerin id. (Mand..); suka star (Kui); hu_ka, hukka id.; suk'erika stars (Kuwi)(DEDR 2646). http://www.hindunet.org/saraswati/dictionary/2863TO.HTM 3132.Bright; handsome: s'ukra bright; brightness (RV.); s'ukla bright, white (AitBr.); bright half of month (Gr.S'r.); sukka bright (Pali); s'ukar pretty, pleasant; s'uka_r quietly (Gypsy); s'u_kri naked (woman)(Kal.); chuk good fortune (N.); suk bright, white; bright half of month (H.); su_kad.i sandal-wood (OG.); sukhar. (G.); sukkila, sukkilla bright, white (Pkt.); s'ukl.i_ moon; s'uklo_ white (WPah.); s'ukula white (D..); sukilo white, shining (Ku.N.); xukula_ (A.); sukka planet, star (Pali); sukka the planet Venus (Pkt.); s'u_k-ta_ra_ (WPah.); suk-ta_ra_ Venus (B.); su_k, suk Venus, Friday (H.); su_k Venus (M.)(CDIAL 12506).

Meteor, to shine ul.ku, ul.uku (Ka.); ulka_ (Skt.); ul.ku = to shine (Ka.); **ukka_** (Pkt.) [Note two stars shown as phonetic determinants of a water-carrier on a Mesopotamian Gadd seal]. **ukka_,** 'stars'; rebus: **ukka_,** 'furnace'

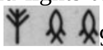


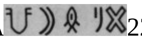
The yogi is in penance. Mohenjo-daro. Sealing. Surrounded by fishes, gharials? (monitor lizards) and snakes, a horned person sits in 'yoga' on a throne with hoofed legs. One side of a triangular terracotta amulet (Md 013); surface find at Mohenjo-daro in 1936. Dept. of Eastern Art, Ashmolean Museum, Oxford.

There are objects with epigraphs with a comparable motif of a yogi.

Unprovenanced Harappan-style cylinder seal impression; Musee du Louvre; cf. Corbiau, 1936, An Indo-Sumerian cylinder, *Iraq* 3, 100-3, p. 101, Fig.1; De Clercq Coll.; burnt white agate; De Clercq and Menant, 1888, No. 26;

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Collon, 1987, Fig. 614. A hero grasping two tigers and a buffalo-and-leaf-horned person, seated on a stool with hoofed legs, surrounded by a snake and a fish on either side, a pair of water buffaloes. Another person stands and fights two tigers and is surrounded by trees, a markhor goat and a vulture above a rhinoceros. Text: 9905 Prob. West Asian find Pict-117: two bisons facing each other.

m1181A2222 Pict-80: Three-faced, horned person (with a three-leaved pipal branch on the crown), wearing bangles and armlets and seated, in a yogic posture, on a hoofed platform

kabat.a, kapat.e, kappat.e, kappad.i, kappad.e, kabat.e, kabbat.e, gabbila_yi = a bat (Ka.); kapt. = butterfly, moth (Ko.)(DEDR 1216).

kundu = to sit (Ta.); **kun.d.aru** =,. kun.d.ru = to fall so as to sit on the ground (Ka.lex.) kun.d.ru, kun.d.aru, kul.ir, kul.l.ir, kul.l.iru, ku_d.aru, ku_d.ru = to sit down (Ka.) kun.d.rike, kun.d.arike = sitting down or on; that on which one sits down, as a mat, a cumbly (Ka.lex.) **kudikilu, kudikilabad.u** = to squat down (Te.lex.) kul.iyu, kul.irdu, kul.tu, kul.l.atu, kul.l.ardu, ku_tu, kuntu = having sat down (Ka.lex.) kuntu (kunti-) to sit on the heels with legs folded upright, squat; n. sitting on the heels, squatting (Ta.); kuttuka = to squat, sit on one's heels (Ma.); kuton.u = to sit (Tu.); gontu-gu_rcun.du to squat, sit with the soles of the feet fully on the ground and the buttocks touching it or close to it; kudikilu, kudikila~bad.u to squat down; kundika_l.l.u, kundikundika_l.l.u = a boys' game like leapfrog; kunde_lu hare (Te.); kud- to sit; kuttul = a stool to sit on (Go.)(DEDR 1728).

The glyph of seated person may be analysed with reference to the orthographic details depicted in two parts: one above the waist and the other below the waist.

Glyphs above the waist seem to depict the semant. of kiln, furnace. Glyphs below the waist seem to depict the semant. of workshop.

The substantive property item conveyed by the message is a kiln or furnace (**cul.l.ai**) for native metal (**aduru**).

Rebus: **cul.l.ai** = potter's kiln, furnace (Ta.); cu_l.ai furnace, kiln, funeral pile (Ta.); cul.l.a potter's furnace; cu_l.a brick kiln (Ma.); culli_ fireplace (Skt.); culli_, ulli_ id. (Pkt.)(CDIAL 4879; DEDR 2709). **sulgao, salgao** to light a fire; **sen:gel, sokol** fire (Santali.lex.) **hollu, holu** = fireplace (Kuwi); sod.u fireplace, stones set up as a fireplace (Mand.); ule furnace (Tu.)(DEDR 2857).

[Together with (1) **cu_d.a_,** 'bracelets', a number of other phonetic detrminatives are used in the orthography of the horned, seated person: (2) **cu_d.a_, cu_la_, cu_liya_** tiger's mane (Pkt.) [note the mane on the face]; (3) **cu_d.a**, 'head-dress'. The rebus substantive points to: **cu_l.ai**, 'kiln, furnace'].
Mane **ul.a** (IL 1240)
ur..a = king's paraphernalia (Ma.)

Rebus: **aduru** 'native metal' (Ka.)

The face is depicted with bristles of hair, representing a tiger's mane.

cu_d.a_, cu_la_, cu_liya_ tiger's mane (Pkt.)(CDIAL 4883)

ka_ruvu = mechanic, artisan, Vis'vakarma, the celestial artisan (Te.); -ga_re = affix of noun denoting one who does it, e.g. samaga_re = cobbler (Tu.); garuva (Ka.); gar_uva = an important man (Te.) **garia** = in comp. Possessed of; doer or agent; badgaria = wise; bal garia = strong (Santali.lex.) gar [Skt. kr.; karavum = to do] a suffix found at the end of compounds, showing the 'doer of an action'; soda_gar =

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

a seller; **ka_ri_-gar** = an artisan (G.lex.) If the pubes of the woman with spread out thighs are connoted by **kut.hi**, 'furnace'; the pictorial motif together with a foetus emerging out of the thights is intended to connote a furnace-artisan: **kut.hi-gar_uva** (pubes, foetus) or, alternatively: **kut.hi-garu** (furnace-mould).

ka_ruvu = mechanic, artisan, Vis'vakarma, the celestial artisan (Te.);
ga_re = affix of noun denoting one who does it, e.g. samaga_re = cobbler (Tu.); garuva (Ka.); gar_uva = an important man (Te.) cf. **–ka_ra** *suffix*. 'worker' (Skt.)

Bristles, erection of hair of the body: **garu, gaguru** (Te.) [Note the imagery of bristles on the face of the seated person, almost looking like a tiger's mane. The tiger's mane is: **cu_l.a**; rebus: **cu_l.a** 'furnac, kiln' + bristles '**garu**'; rebus: **ga_re** 'important person, worker'; thus the composite glyph can be read as: **cu_l.a ga_re** 'furnace-kiln worker']. See also: Mane **ul.a** (IL 1240) **ur..a** = king's paraphernalia (Ma.)

karu = embossed work, bas-relief (Ta.); karukku (Ta.) karavi, karu, **garu** = a mould (Tu.) **karuvi** = tool (Ta.)[Thus, when tablets are embossed with glyphs to create objects in bas-relief, the artisan is trying to denote the nature of the function carried out by the **–ga_re** 'important person'; for example, when a tree is so depicted, it may represent **kut.hi ga_re** 'furnace worker'.]

Foetus **karuvu, karugu** (Te.) [Rebus: **-ga_re** 'important person, worker'. See the glyph of foetus emanating from a woman with her thighs spread out and lying upside down. **kut.hi** 'pubes'; rebus: kut.hi 'smelting furnace'; hence, the composite glyph connotes: **kut.hi ga_re** = furnace worker.]

The person wears bangles on his arms, from wrist to fore-arm.

cu_d.a = bracelet (Skt.); cu_d.a, cu_la bracelet (Pkt.);. cu_r.o (S.); cu_r., cu_r.a_ (L.P.); cur.o (Ku.); curo, curi (N.); suri_ a kind of ornament (A.); cu_r., cur.a_ bracelet (B.); cu_r.i_ (Or.Mth.); cu_ra_ anklet, bracelet (OAw.); cu_r.a_ ring on elephant's tusk, bracelet; cu_r.i_ bangle (H.); cu_r., cu_r.i_, cu_r.o (G.); cud.a_ (M.)(CDIAL 4883). chur. bangle, bracelet (P.) chhura_ (P.) tsud.o, tsude.a_ (Kon.); suri, surye (Kon:kan.i) [Note the glyph of a horned, seated person wearing bracelets from wrist to forearm]

Alternative rebus of glyphs of person seated on a platform: hasani 'furnace'; asani 'seated'; pin.d.i 'platform'; Rebus: *bhin.d.ia* 'a lump, applied especially to the mass of iron taken from the smelting furnace'.

The person wears a headdress with twigs; the glyph can be represented by two lexical clusters.

cul.li = dry twigs, small stick, branch (Ta.); a dry spray, sprig, brushwood (Ma.); cul.l.ai a chip, fuel stick; nul.l.i small sticks for firewood (Ma.); cul.k long pliable stick, stalk of plant (Ko.)(DEDR 2706).

ad.aru twig; ad.iri small and thin branch of a tree*; ad.ari* small branches (Ka.); *ad.aru* twig (Tu.)(DEDR 67). Cf. **at.artti** = thickly grown as with bushes and branches (Ta.) *d.ar a* branch; *dare* a tree; a plant; to grow well; ban: *darelena* it did not grow well; *toa dare* mother, the support of life (Santali)

cavul.am, caul.am = tufted hair; cu_d.a_karumam (Ta.lex.). cu_d.a_ = topknot on head; cu_lika_ cockscomb (Skt.); cu_la_ ceremony of tonsure (which leaves the topknot)(Skt.); cu_l.a = crest; cu_l.a_ topknot (Pali); cu_d.a_, cu_la_, cu_liya_ topknot, peacock;'s crest (Pkt.); cula_ hair of head, lock, headdress (B.); cu_r. topknot, ceremony of tonsure (H.)(CDIAL 4883). **cu_l.war** = a grown-up woman wearing all her plaits of hair (Kho.)(CDIAL 4886). **caud.a** = relating to tonsure (skt.); caula (Mn.A_s'vGr.); co_laa shaving the head (Pkt.); col.e~ tonsure of a child's head (M.)(CDIAL 4936).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

[Note the seven women with plaited hair: **cavul.a** [plaited hair; rebus: cavat.u, lead-silver ore (fuller's earth) + **bagala_** (pleiades; rebus: ban:gala_ goldsmith's furnace); the reading is: **cavat.u ban:gala_** = furnace for lead-silver ore].

Stone Quarry

pan.e ground that is worked; tillage; a quarry (Ka.Ma.); pan.ai, pan.n.ai (Ta.); pan.n.eya, pan.ya, pan.e a farm, a landed estate (Ka.lex.) ba_n:ggar land dependent on rainfall; hard, barren soil (P.lex.) cf. va_n-am-pa_rtta-pu_mi id. (Ta.lex.) banjri land irrigated by canal water alone (P.lex.) pan.e quarry; kalpan.e quarry where red laterite stones are cut (Tu.lex.) *pan.ai*, *pan.n.ai* agricultural tract, garden (Ta.); **pan.a** ground which is worked (including stone-quarry (Ma.)(DEDR 3891). *pad.uku* stone (Te.); *pan.ku* id. (Kond.a)(DEDR 3890).

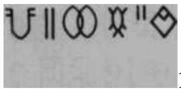
pan.ai pipal (Ta.); **pan.i** id. (Ka.)(DEDR 3895).

phan.i_, phan.i_dhar, phan.i_ndra a large serpent (G.); *phan.a_*, *phan.i_* the hood of a serpent (G.); **phen.a** [Dh. Des. *phad.a_;* Hem. Des. *phad.am* fr. Skt. *phan.a_*] the hood of a snake (G.) *pat.am* cobra's hood (Ta.Ma.); *ped.e* id. (Ka.); *pad.aga* id. (Te.); *par.ge, bar.ak, bar.ki, bir.ki* hood of sepent (Go.); *(s)phat.a*, *sphat.a_* a serpent's expanded hood (Skt.); *phad.a_* id. (Pkt.)(DEDR App. 47; CDIAL 9040).

d.hon.d.-phod.o [M. dhon.d.a_, a stone] a stone-cutter, a stone-mason; *d.hon:d.-jhod..o* [M. *dhon.d.a_* a stone + *jhod.avum*] a stone-cutter; a stone-mason; *d.hon.d.o* a stone; a blockhead; a stupid person (G.)

dho~n.d. a species of snake found in water; *bitkil dho~n.d.*, *raj dho~n.d.*, *ayan: dho~n.d.* (Santali) *d.ond.ya_* water-snake (Kol.); *d.ond.uli*, *dho_ndi_* (Go.); < *dun.d.ubha* (Skt.)(DEDR 2985; CDIAL 6411)[25].

That silver metal --**khura**--is conveyed by the glyph (hoof on the legs of the stool) is reinforced on other epigraphs where a seated person is shown with hooked snakes rearing on either side of the platform. Since silver ore occurs with lead, the snake glyph may be read as: **na_ga** 'snake' (Skt.)[26] Rebus: **na_ga** = lead (Skt.) **na_g** lead (K.); na_ga id. (Skt.); **nan** lead (Sh.)(CDIAL 7040).cf. **anakku** = lead, tin (Akkadian). On glyphs of composite animals, a hooked snake is depicted as a tail of the animal composite. **xola_** = tail (Kur.) Rebus: **kol** 'metal' (Ta.) Thus conveying lead-metal: **na_ga kol** cf. tuttuna_kam = zinc (Te.); tuttuna_gamu = zinc, pewter (Te.)

m0453At m453BC 1629 Pict-82 Person seated on a pedestal flanked on either side by a kneeling adorant and a hooded serpent rearing up.

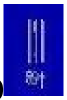
khura silver (Nk.); *kuruku* 'whiteness'; *kuru* brilliancy (Ta.); *kuro* silver (Kol.Nk.Go.)(DEDR 1782). koru = bar of metal (Ta.)

bhallaka = a kind of copper, enumerated under the eight pisa_caloha_ni, or copper coming from Pis'a_ca country (Pali.lex.)

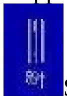
pa_l.a = ingot of gold or silver (Ka.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

bhalwa = an instrument used by blacksmiths when punching holes in iron to guide the punch (Santali) **bha_lod.um** = the spear-head fixed at the end of an arrow (G.lex.)[13] phala = point of arrow (Kaus'.); blade of knife (MBh.); point of arrow or sword (Pali); point of arrow (Pkt.); phal = blade of mattock, tip of arrow (K.); phal = blade (P.N.B.); phal.a_ blade (Or.); phal.i_ = arrowhead (Or.); phal = blade (H.); phal. (G.M.); phal.e~ =spearhead (M.); pharha_ = blade, nib (P.) bhalla = a kind of arrow (MBh.); bhalli_ = arrowhead of a particular sharpe (Skt.); bhalla = spear (Pkt.); ba_la (K.); bha_lo (S.Ku.N.); bha_la_ = spear, crescent-headed arrow (Or.); spear for driving an elephant (Bi.); spear (Mth.M.); large spear (H.); bha_lu~ = spear (G.)

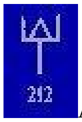
(44) (124) **Sign 89 (314)**

Copper tablets (29)

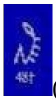
Sign 89 **rakha** = three (G.)[27] Rebus: **ran:ku** = tin (Santali)

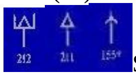
mer.go = rimless vessels (Santali) The rimless vessel occurs on 323 epigraphs according to statistics from Mahadevan corpus.
Rebus: **med.** iron (Ho.); *me~rhe~t* 'iron' (Santali) **meruku** = lustre, shine, silver (Ta.) *meruku* glitter, luster, polish (Ta.); *merugu* shine, luster (Te.); *mer_acu* glitter (Te.); me_r to shine (stars)(Kuwi); *merxa_* sky, heaven (Kur.); mergu, merge sky, heaven (Malt.)(DEDR 5074). The early meaning could be: 'silver'.
Substantive: *paghal* pig-iron (Santali)

Glyph: *pagari, pagal.i* arrow, dart (Tu.); *pakar..i* arrow (Ta.Ma.)(DEDR 3806).

Alternative homonym: **kundu** (S.) spear[28] **bhalwa** = arrow with spearhead (Santali)
Rebus**: bhallaka** = a kind of copper (Skt.)

(10) **Sign 155 (49)**

(10) (24)

Sign 155: **kan.d.a, ka_n.d.a, ka_d.e** = an arrow (Ka.) **ka_n.d., ka_n., ko_n., ko~_, ka~_r.** arrow (Pas'.); **ka~_d.i_** arrow (G.)
Rebus: **kan.d.** = altar, furnace (Santali)

Glyph: **kan.** = arrow, wooden handle of a hoe, pickaxe or other tool (Ta.)(DEDR 1166).
Rebus: **kan-** = copper (Ta.)

---

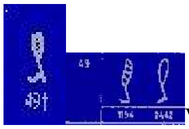
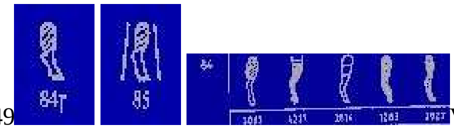
13 Homonym: **bhala_n.d.e~** = the half-pot or the shard which, with fire in it, the gosa_yi_ or the gondhal.i_-people hold on their hand; gondhal.i_ are musicians and singers; gondhal. = a tumultuous festivity in propitiation of devi_ (M.lex.) **bha_liyo** = a waterpot (G.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

s'ili_ dart, arrow (Skt.)
s'ila = rocks (Skt.)

khuro (N.) head of a spear; ks.ura (RV.), sharp barb of arrow (R.); khura_ iron nail to fix ploughshare (H.) khura = razor (Pali) **co_i, co_** sickle (Wg. < **ks.auri_**); **ks.aura** performed with a razor (VarBr.S.); n. shaving (Skt.); **ks.auri_** knife (Skt.); **c.ho_ra** knife (Dm.); **c.hor** (Kal.)-- **khaura** razor (Pkt.influenced by Skt.)(CDIAL 3756).

kurappam currycomb (Ta.Ma.); **korapa, gorapa** id. (Ka.); **kurapamu, kor.apamu, gor.apamu** id. (Te.)(DEDR 1771). **khara_ramu** id. (Te.lex.) **currycomb** a comb consisting of a series of upright serrated ridges, for grooming horses (English)(Doubleday lex.)[cf. **curry** rub down with a comb and brush XIII cent.; Sp. **correar** prepare (wool) for use; OF. **correier** arrange, equip, curry (a horse); **curry favel** rub down the fallow or chestnut horse, which, for some obscure reason, was taken as a type of perfidy or duplicity; hence **curry-comb** (ODEE).]


V049

V084

Thigh = khura (Ka_tyS'r.), kuracu , kuraccai = horse's hoof (Ta.), kul.ampu = hoof (Ta.) kur_aku (Ma.) ku_t.a = hip (Tu.) kurki = thigh (Go.) Glyph: **khura** = hoof (Santali) ku_t.a = hip (Tu.) kurki = thigh (Go.)

ma~r. a chaplet sometimes worn by bridegrooms and brides at marriage (Santali) *mod.a* a kind of chaplet worn by females on auspicious occasions (G.) *man.d.ana* an ornament, a decoration; jewels; trinkets; adorning (G.) fr. *man.d.* (Skt.) *man.n.u* to do, perform, adorn, decorate, polish (Ta.); *man.ai* to create, fashion (Ta.); *manayuka, maniyuka* to fashion, form earthenware, make as a potter (Ma.)(DEDR 4685).

Glyph: platform: *man.d.hwa, man.d.ua, man.d.wa* 'a temporary shed or booth erected on the occasion of a marriage'; *man.d.om* 'a raised platform or scaffold'; *ma~r.om* 'a platform, used to keep straw on, or from which to watch crops' (Santali) *man.ai* low wooden seat, low earthen dais, wooden base of cutting instyruments, footstool (Ta.); *man.i, man.e* stool, low bench, seat (Ka.); *man.e* low stool to sit upon (Tu.)(DEDR 4675).

Rebus: **man.d.a_** = warehouse, workshop (Kon.lex.) *mad.hi_, mad.hud.i_* a hut, shed, a cottage (G.) *man.i* jewel of office (Skt.); *man.iyam* office of the village headman (Ta.); superintendence of temples, palaces, villages (Ma.); *man.e.v, man.ye.v* the office of monegar (Ko.); *man.iya, man.iha, man.eya, man.e* superintendence of temples, maths, palaces, custom-houses (Ka.); *man.iga_re* revenue inspector (Tu.); *man.iyamu* office or duties of the manager of a temple (Te.)(DEDR 4674).

Glyph: seated: *asan man.d.ao* 'to sit tailor-wise for a long time, to sit about with nothing to do; lazy; to lie down, as an animal in its lair'; *asan man.d.ao akanae, hokrho kan leka* 'he has taken up his position as if he were a watchman' (Santali) *mat.ku* squat, squab, fat and short (Santali) *asan man.d.ao, pat.gan.d.o* to squat, to sit tailorwise (Santali)

ma_d.a = shrine of a demon (Tu.); ma_d.ia = house (Pkt.); ma_l.a a sort of pavilion (Pali); ma_l.ikai = temple (Ta.)(DEDR 4796).

cu_l.ai = kiln; **cul.l.ai** = furnace (Ta.). **culli** = a fireplace, a cooking stove, ole (Ka.) culli = a fireplace, a hearth, a funeral pile (Te.) **cula_ sagad.i_** = a portable hearth or stove of iron, clay etc. (G.) **culi_, culd.i_** = a small fireplace, a hearth; **culo, cu_l, cu_lo** = a fireplace, the hearth; a stove (G.) **culha** = a fireplace; mit achia culha = a fireplace with one opening; bar achia culha = a fireplace with two openings (Santali)

cul.l.i = dry twigs, small stick, branch (Ta.); a dry spray, sprig, brushwood; cul.l.ai = a chip, fuel stick (Ma.); long pliable stick, stalk of plant (Ko.)(DEDR 2706).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

cu_l.i = scales of fish (Ma.)(DEDR 2740).

cuila, coelo = sharp, pointed (Santali) **s'u_la, s'u_le, sul.a, su_la, su_l.a** = a sharp or pointed weapon: a pike, a spear, a lance; s'u_li = spearman; s'u_lika = piercing, killing (Ka.)

cu_l = pregnancy; cu_li = pregnant woman (Ta.); cu_l = pregnancy (Ma.Ka.); cu_lu = pregnancy, child, offspring; cu_li = child, offspring; cu~_d.i = pregnancy (Te.); su_l pregnant (animal)(Kuwi)(DEDR 2733).

eruvai copper, blood (Ta.); *ere* a dark-red or dark-brown colour (Ka.)(DEDR 817). *ere* black soil (Ka.)(DEDR 820). *ke~r.e~ ko~r.e~* an aboriginal tribe who work in brass and bell-metal (Santali) *ker.e sen:gel* fire in a pit (Santali)

Glyph: *garud.a* eagle (Skt.) [*garud.a bar got.an* two eagles duplicated; *kod.* place where artisans work; *kot.* fort]

Substantive: *gara_d.o, gara_d.* a ditch, a pit (G.)

Substantive: *garad.o, garod.o* A priest of the pariahs (G.)

ero = watering place for cattle (G.)

eru = a serpent (G.)

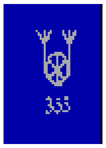
er-aka = upper arm, wing (Te.) [Note the orthographic emphasis on the wing of a bird].[14]

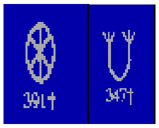
[14] Substantive: *araka* a plough with bullocks complete (Ta.); *are* a plough (Malt.)(DEDR 198).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

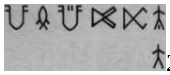
kundan = pure gold (G.Persian); the socket of a gem (G.) **kundanamu** = fine gold used in very thin foils in setting precious stones; setting precious stones with fine gold (Te.lex.) **kundamu** = one of the seven nidhi-s of Kubera (Te.) **kunda** = a city of vidya_dhara-s (Pkt.lex.) kuntan-am = interspace for setting gems in a jewel; fine gold (Ta.); kundan.a = setting a precious stone in fine gold; find gold; kundana = fine gold (Ka.); kundan.a = pure gold (Tu.)

kunda_r turner(A.); **ku~da_r, ku~da_ri** (B.); **kunda_ru** (Or.); **kundau** to turn on a lathe, to carve, to chase; **kundau dhiri** = a hewn stone; **kundau murhut** = a graven image (Santali) **kunda** a turner's lathe (Skt.)(CDIAL 3295).[15]





Sign 355 seems to ligature sign 347 and sign 391 (Sign 391 depicts the opening in the nave or hub of wheel and also six spokes: **ara_**) **kund** opening in the nave or hub of a wheel to admit the axle (Santali) **kund ruka** = a gouge, a chisel with which circular holes are made in wood; **sagar. kund** = the opening in the nave of a wheel to receive the axle (Santali.lex.)

m0304AC  2420

kundavum = a manger, a hay-rick (G.lex.) **kundhavum** = a heap of hay or sticks (G.lex.) **kuntam** = haystack (Ta.); kuttar-i = a stack, a rick (Ka.)(DEDR 1724). [Note the haystack on the stool on which a person sits].

ku~d. = basin (G.)

kunda = a pillar of bricks (Ka.); pillar, post (Tu.Te.); block, log (Malt.); **kantu** = pillar, post (Ta.)(DEDR 1723). **kunda** = a post or pillar (Te.)

kun.d. = a pit (Santali) **kun.d.amu** = a pit for receiving and preserving consecrated fire; a hole in the ground (Te.) **kun.d.am, kun.d.a** sacrificial fire pit (Skt.) **kun.d.a** an altar on which sacrifices are made (G.)[29] **gun.d.amu** fire-pit; (Inscr.)

---

[15] **kundakara** turner (Skt.); kunda_r (A.); ku~da_r, ku~da_ri (B.); kunda_ru (Or.); ku~dera_ one who works a lathe, one who scrapes (H.); ku~deri_ f.; ku~derna_ to scrape, plane, round on a lathe (H.)(CDIAL 3297). gud.i-ga_r-a a turner, one whose occupation is to form wooden articles (also the plaything called cakra, hubble-bubbles, etc.) with a lathe and to cover them with shellac of different colours; gud.ugud.i ma_d.uvavanu id. (Ka.)(Ka.lex.) ku~dnu to shape smoothly, carve (N.); kund lathe (A.); kundiba to turn and smooth in a lathe (A.); **ku~d** lathe (B.); ku~da_, ko~da_ to turn in a lathe (B.); ku~_nda lathe (Or.); ku~diba_, ku~_diba_ to turn (Or. > ku~_d lathe (Kur.); kund brassfounder's lathe (Bi.); kunna_ to shape on a lathe (H.); kuniya_ turner (H.); kunwa_ turner (H.)(CDIAL 3295). Wood-worker: cundaka_ra turner (Pali); cuna_ro maker of wooden vessels (Ku.); cuna_ro, cana_ro, cu~da_ro id. (N.)(CDIAL 4862). cunda wood or ivory work (Skt.); ivory worker (Pali); cundiba_ to do woodwork (Or.)(CDIAL 4861). **kuni ruka** a gouge (Santali.lex.) **ks.no_tra** whetstone (RV. ii.39.7)(Vedic.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

kun.d.i_ = chief of village. **kun.d.i-a** = village headman; leader of a village (Pkt.lex.)

khu~t.ro = entire bull; khu~t. = bra_hman.i bull (G.) **khun.t.iyo** = an uncastrated bull (Kathiawad. G.lex.) **kun.t.ai** = bull (Ta.lex.) cf. khu~_dhi hump on the back; khui~_dhu~ hum-backed (G.)(CDIAL 3902). The zebu is: **khu~t.**, a bra_hman.i_ bull, a bull found even today in many parts of Gujarat, roaming the streets of Ahmedabad, for instance. The word may connote the rebus of **kut.ha_ru**, armourer or weapons maker (metal-worker), also an inscriber or writer. **khu~_t.ad.um** a bullock (used in Jha_la_wa_d.)(G.)

kun.d.= the opening in the nave or hub of a wheel to admit the axle; **kund ruka** = a gouge, a chisel with which circular holes are made in wood; sagar. kund = the opening in the nave of a wheel to receive the axle (Santali.lex.)

khon.d. square (Santali)

kun.d.i_ crooked (of buffalo's horns)(L.); kun.d.a_ a bullock whose horns have been turned (L.)(CDIAL 3260). khun.d.ha_ blunt (P.)(CDIAL 3899).

kut.ha_ri = an axe-bearer, a chief of the door-keepers (Ka.lex.)

Naked woman **kot.a_ri** = naked woman (IL 1829a)

khu~_t.iyum an upright support in the frame of a wagon (G.) **kut.aramu, kut.haramu** = the post round which the string of the churning stick passes (Te.lex.)
ku_t.a, 'chief (**kut.ha_ru**, 'writer, armourer')(G.)

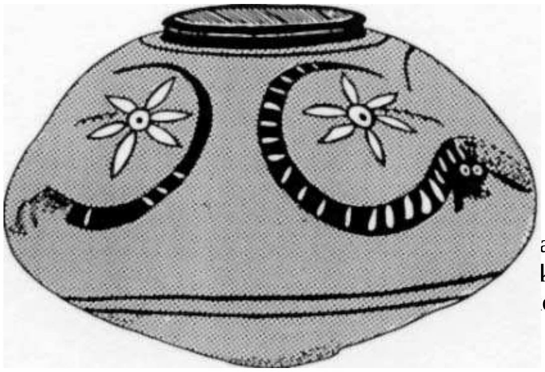
Tent, house **kut.a_ram** (Ta.)(IL 4872) **ku_t.a** a house, dwelling (Skt.lex.) **khu~t.** = a community, sect, society, division, clique, schism, stock; khu~t.ren per.a kanako = they belong to the same stock (Santali) **khu_t.** Nag. khu~t., ku_t. Has. (Or. khu_t.) either of the two branches of the village family.

Glyph: **ko_t.u** = horns (Ta.)[16]

Rebus: **kod.** = artisan's workshop (Kuwi)

d.ab, d.himba, d.hompo 'lump (ingot?)', clot, make a lump or clot, coagulate, fuse, melt together (Santali) **d.himba** = become lumpy, solidify; a lump (of molasses or iron ore, also of earth); **sadaere kolheko tahe_kanre d.himba me~r.he~t reak khan.d.ako bena_oet tahe_kana_** = formerly when the Kolhes were here they made implements from lumps of iron (Santali)

darap, dorob, dorob 'metal, excluding iron, money, wealth'; *dorobos* all the necessaries of life (Santali)



d.abe, d.abea 'large horns, with a sweeping upward curve, applied to buffaloes'; d.abea kad.a = a buffalo with large curved horns; d.abe deren = horns as described (Santali)

Buffalo-horned face. Painting on a jar. Kot Diji. C. 2800-2600 BCE [After Khan 1965, pl.

animals (Go.); **ko_r** (pl. **ko_hk**), **ko_r.u** (pl. **ko_ska**) horn, antler (Kui)(DEDR 2200).
ob = branch (Ko.) **gorka, gohka** spear (Go.)

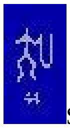
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

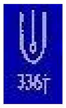
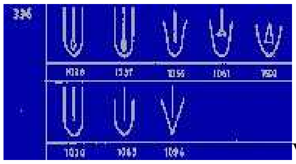
XVIIb; cf. Fig. 2.25 in JM Kenoyer, 1998, *Ancient cities of the Indus Valley Civilization*, Karachi, Oxford University Press].

mu~he~ = face; rebus: **mu~ha_** = quantity of iron smelted at one time in the earthen furnace of the Kolhes; mu~ha_ me~r.he~t = iron smelted by the Kolhes and formed into an equilateral lump a little pointed at each of four ends (Santali)

The painting on a pot shows large horns and a six-pointed star[17], pleiades **bahula_;** rebus: **ban:gala** = portable stove of goldsmith (Te.) What is being transported in the pot is **d.ab** 'metal ingot'

d.hompo = knot (on a string)(Santali)

Sign 44 **d.abe** = adj. bandy-legged (with knees a little bent)(Santali)

 V336

V337 Signs 335, 336, 337 **d.abu** 'an iron spoon' (Santali)

(13)**Sign 336 (236)** Copper tablets (27) m1148 Field Symbol 7 (10)

Alternatives: **gan.t.e** = a spoon; a ladle (Te.lex.) Rebus: **kan.d.** = furnace, altar (Santali) **mer.go** = rimless vessel; **bat.i** = rimless pot; rebus: **me~r.he~t bat.hi** = iron smelting furnace (Santali)

dab dabia adj. broad, broud-mouthed (Santali)

d.abri 'a small earthenware dish, used as a lid'; **dap** 'to cover, to thatch' (Santali)

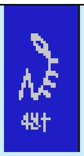
d.abbu a dub or copper coin, four pays (Ka.Te.); **t.appu** (Ta.); **d.habbu_** a double pice (M.)(Ka.lex.) **ta_mbro** = copper (Tu.lex.)[30]

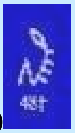
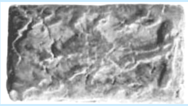
---

[17] Alternative homonyms: **tara_** alloy of 8 parts of copper to 5 of tin, used for making metal vessels (pukar..tara_-p- po_kkillai) (Cine_n-. 169)(Ta.lex.) **ta_ra_** = stars (Skt.) **ko_l.** = planet (Ta.); rebus: **kol** alloy of five metals (Ta.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Goldsmith's tool: saw

Sign 48 

(114) **Sign 48 (168)**  Copper tablets (13)  h172B Field Symbol 36 (10)

Sign 48: **barad.o** = spine, the backbone, back (G.)

Rebus: **bharatiyo** = a caster of metals, a brazier; bharatar, bharatal, bharatal. = moulded; an article made in a mould (G.)
barduga = a man of acquirements, a proficient man (Ka.)

Glyph: **t.hat.ra** = m. emaciated (Santali)

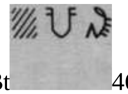
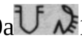
Rebus: **t.hat.era** = a brazier, a caste who manufacture and sell brass ware; t.hat.ori = a worker in brass, a goldsmith (Santali)

kuduru = lizard (Te.); Rebus: **kuduru** = portable gold furnace (Te.)

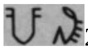
karod. = spine (G.lex.) kro_d.amu = bosom or breast (Te.); krod.a = breast (Skt.) karot.h = side of the body (G.lex.)

karad.a saw (Apabhram.s'a) (DEDR 1265). **karad.o** = a goldsmith's tool (G.lex.) **khara_di_** = a turner; **khara_da** = a turner's lathe (G.lex.) kara_d.i_ = a goldsmith's tool; kara_d.o = a carpenter's tool used in hewing down large pieces of wood (Used in the Surat district); **kara_i_** = a sawyer; one whose business it is to saw timber; a crow bar (Used in Kathiawa_d.)(G.lex.) karan.d.amu = a sword (Te.lex.) **karata = saw** (Or.); karapatta (Pali); karapattra (Skt.); kart.u (S.); kalvattar (L.); karvattar, karvat large iron blade for cutting a man in two (L.); karot.li small saw (WPah.); karau~ti, kara_ti saw (N.); karat (A.); kara_5 (B.); kara_ta goldsmith's saw (Or.); karavata saw (OAw.); karaut, karauta_, kara~_t (H.); karauti_ small saw (H.); karavata saw (OMarw.); karvat, karvati_ (G.M.); karavata (Si.); kara_ti_ sawyer (B.); **karati_** sawyer (Or.); kara~_ti_ sawyer (H.); karvatiyo sawyer (G.); karatiba_ to saw (M.); karavan saw (Si.)(CDIAL 2795). **kalahoya**, kaladhauta = gold; silver (Pkt.lex.) **kala_da** = a goldsmith (G.lex.)

karud.u = a lump, mass, clot (Te.lex.)

h696At h696Bt 4677 m1000a1487 One-horned bull.

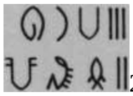
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

m0301 2258 That just two signs constitute the inscription is indicative of the substantive nature of the 'skeleton' glyph in relation to the kan.d., 'altar, furnace'.

The pair of signs (Sign 48 and Sign 342) is a frequently-occurring pair with over 100 occurrences among the epigraphs.

Sign 48 is the centre-piece on a raised copper tablet: Harappa. Raised script. H94-2198. [After Fig. 4.14 in JM Kenoyer, 1998]. Eight inscribed copper tablets were found at Harappa and all were made with raised script, a technique quite different from the one used at Mohenjo-daro for flat copper tablets with many duplicates. The duplicates occur on steatite and faience tablets at Harappa; these may have represented **a commodity or a value.** [cf. JM Kenoyer, 1998, p. 74].

2 7.02 Harappa.Cast tablet, copper alloy. The glyph (Sign 48) depicting the backbone of a kneeling person occurs on side A of a copper plate (m0511).

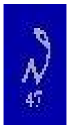
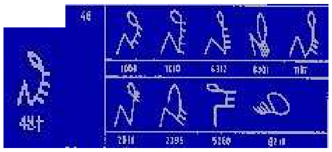
m0511At m0511Bt 2905

The epigraphs (including Sign 48) on a faience tablet are comparable to a portion of text on the copper tablet. Slide 247 Faience tablet.(H2001-5082/2920-02) made from two colors of faience was found eroding from the Trench 54 South workshop area. Identical tablets made from two colors of faience were recovered in Area J, at the south end of Mound AB, in the excavations of Vats during the 1930s.

Sign 48 also occurs on incised potsherds. Kalibangan100A.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

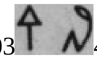
Kalibangan100

 Seated skeletal person (Sign 48) It will be seen from the sign variants that the artist is focusing on three characteristics: the person is seated, the backbone is emphasized, the person wears a hair-do. The kneeling posture is clearly comparable to Sign 45 which shows a kneeling adorant, but Sign 48 is evolved without the ligature of a rimless pot Sign 45

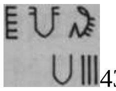
Evolution of Sign 48 can be explained from the orthography of a seal from Kalibangan (048) which clearly demonstrates that the artist is trying to emphasise the semantics of a backbone of a kneeling person, perhaps also making an offering.

Kalibangan048 “The seated person is facing right (in the original seal), leaning forward. He has a large head and a massive jaw jutting forward. The complete ribcage is shown in clear detail with almost all the ribs in position, curving naturalistically on either side of the backbone. The deity appears to be holding a ladle (?) in his right hand. His knees are drawn up and he seems to be squatting on his haunches. The details are clearly visible in the highly enlarged photograph of the seal published in Pl. 275: Omananda Saraswati 1975. *Ancient Seals of Haryana* (in Hindi). Rohtak.” (I. Mahadevan, 'Murukan' in the Indus Script, *The Journal of the Institute of Asian Studies*, March 1999).

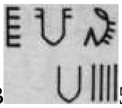
A three sign sequence including this ‘seated skeletal person’ is the most frequently occurring three-sign sequence among the inscribed objects. The occurrence is mostly on miniature tablets of Harappa

h5034129 m0330A 0330B Perforated through the narrow edge of a two-sided seal 1475 Many incised miniature tablets of Harappa contain this sign within a sequence as shown on one side: h959Ait (incised tablet). Many duplicate texts contain this sign sequence.

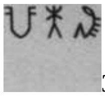
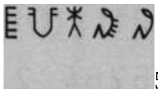
[glyphs: backbone, rim of pot, comb]

h233A h233B 4387

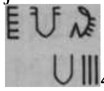
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

h312Ac h312B 5426 h934Ait

h934Bit h959Ait h959Bit 4405

h179A h179B 307 h741Bt 5263

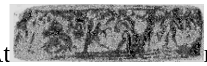
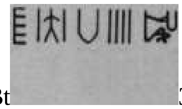
h742At [The last two signs of Text 5263 occur on 184 epigraphs]

[At least 46 inscribed objects with epigraphs contain the sequence of three signs – line 1 (Statistics from Mahadevan corpus) 4387]

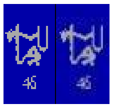
[Dh. Des. **karod.iya_** from Skt. *karot.ika_* the skull; cf. Hem. Des. *kod.iyam* fr. Skt. *kos.t.ha* the inner part] *kod.iyum* an earthen cup holding oil and a wick for a light (G.) Seller of earthenware, earthen goblets, smoking pipes etc. = **kara_d.iyo**, **kara_l.iyo** (G.) *kot.ho* an earthen vessel in which indigo is stored (G.) *khora* a kind of large brass bowl; the vessel which receives the juice of sugar-cane when being pressed (Santali)

karadamu = present to a superior (Te.lex.) **karet.um** = an annual offering and present to a godess or to an evil spirit (G.lex.) karavr.tti (Skt.)

m0478At m0478Bt

m0479At m0479Bt 3224 Repetitive also occurs as texts: 2815, 3230.The text is repeated on three double-sided moulded tablets in bas-relief. The first sign of the text is a glyph depicting a kneeling person, in front of a leafless tree, making an offering, holding a rimless pot in his hands.

m0480At m0480Bt Tablet in bas-relief. Side a: Tree Side b: Pict-111: From R.: A woman with outstretched arms flanked by two men holding uprooted trees in their hands; a person seated on a tree with a tiger below with its head turned backwards; a tall jar with a lid. Is the pictorial of a tall jar the Sign 342 with a lid?

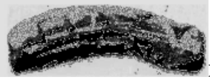
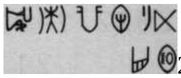
Sign 45 seems to be a kneeling adorant offering a pot (Sign 328)  Signs 45/46 seem to ligature the pictorial of a kneeling-adorant with sign 328

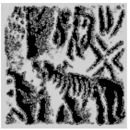
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

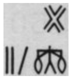
Depicting a kneeling adorant in glyphs and signs

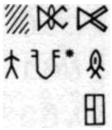
On a twisted, moulded tablet (m0481), there are pictorial motifs on four sides. On side A, there is an epigraph containing six-signs; the last sign of this epigraph (text 2846) includes Sign 45 – kneeling person holding a rimless pot.

m0481At m0481Bt

m0481Ct m0481Et 2846 Pict-41: Serpent, partly reclining on a low platform under a tree.

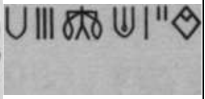


Person kneeling under a tree facing a tiger. [*Chanhudaro Excavations*, Pl. LI, 18]  6118



m1186Acolour 2430 Composition: horned person with a pigtail standing between the branches of a pipal tree; a low pedestal with offerings (? or human head?); a horned person kneeling in adoration; a ram with short tail and curling horns; a row of seven robed figures, with twigs on their pigtails.

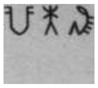
Text 4316



h177Ah177BPict-115: From R.—a person standing under an ornamental arch; a kneeling adorant; a ram with long curving horns.

h178Ah178B 4318 Pict-84: Person wearing a diadem or tall head-dress (with twig?) standing within an arch or two pillars?

h179Ah179B 4307 head-dress standing stars on either side,



Pict-83: Person wearing a diadem or tall within an ornamented arch; there are two at the bottom of the arch.

Glyphs tablet two of two kneeling adorants are shown on side B of a (m0453), flanking a person seated on a low platform; serpents rear up on either side, close to the two kneeling adorant glyphs.

med. iron (Ho.); *me~rhe~t* ‘iron’ (Santali)

man.t.i kneeling on one knee as an archer (Ta.); *man.tuka* to be seated on the heels (Ma.); *man.d.i* what is bent, the knee (Ka.); knee (Tu.); kneeling on one knee (Te.); *men.d.a_*, *mind.a* knee (Go.); **med.a, men.d.a** id. (Kond.a); *mend.a* id. (Pe.KuiKuwi); *mand.u_ki* part of elephant’s hind leg; *met.* knee-joint (M.)(DEDR 4677). **man.d.i** = kneeling position (Te.lex.) mandil, mandir = temple (Santali)

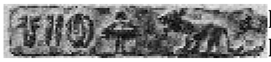
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

karad.a_pa_t.i_ = a wooden board in the form of a slate, on which little boys learn elementary figures and the letter of the alphabet (G.lex.) **karud.u** = a rough day book, account (Te.lex.); kharad.o = a rough copy, a register of fields in a village; a subscription list (G.lex.)

kara.d.amu = a wave (Te.lex.) kharad.akum = a streamlet (G.lex.); ks.ar = to drop (Skt.)

karot.i = human skull (G.Skt.)

ka_rad.o = a field; a plot of ground; a bed of rice (G.); keda_ra (Skt.)(G.lex.) kara_d.o = a high and steep bank; kara_d. = a precipice (G.lex.)



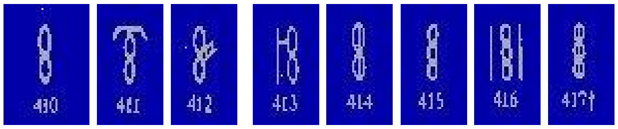
karat.i, karat.ikai a kind of drum (said to sound like a bear)(Ta.); karad.i, **karad.e** an oblong drum beaten on both sides, a sort of double drum (Ka.); karat.a a kind of drum (Skt.)(DEDR 1264).

karat.i, karut.i, kerut.i fencing, school or gymnasium where wrestling and fencing are taught (Ta.); garad.i, garud.i fencing school (Ka.); garad.i, garod.i (Tu.); garid.i, garid.i_ id., fencing (Te.)(DEDR 1262).

karat.i, 'elephant' (Te.)

khara_di_ = turner (G.)
karad.o, kara_d.i_ a goldsmith's tool (G.lex.)
karan.d.amu = a bee-hive (Te.)
karad.a = crown
khared.o = a currycomb (G.lex.)
karad.a = a sting (G.lex.)
karad.o = a toe ring (G.lex.)

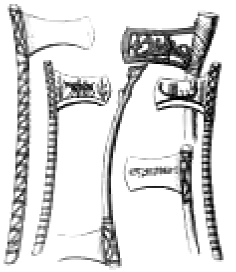
kad.iyo [Hem. Des. **kad.a i o** = Skt. sthapati a mason] a bricklayer; a mason; kad.iyan.a, kad.iyen.a a woman of the bricklayer caste; a wife of a bricklayer (G.)



kad.i_ a chain; a hook; a link (G.); **kad.um** a bracelet, a ring (G.)

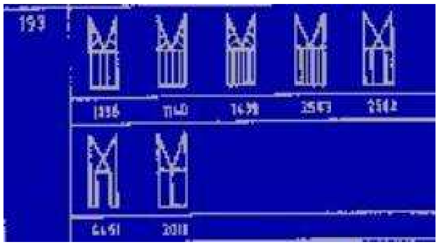
khad.a_i_ a heifer (used in the Sorat.h Pra_nt)(G.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



Depitcting a kat.a_r, dagger in inscriptions of the civilization

Egyptian axes of bronze (After Fig. 89 in: Richard F. Burton, 1884, *The Book of the Sword*, New York, Dover Publications, Inc., p. 89). "The **Akhu** or war-axe was, as we might expect, known to ancient Egypt in early days, and became an object de luxe. A gold hatchet and several of bronze were found buried as amulets in the coffin of Queen Askhept, the ancestress of the Eighteenth Dynasty.



Sign 193 and variants.

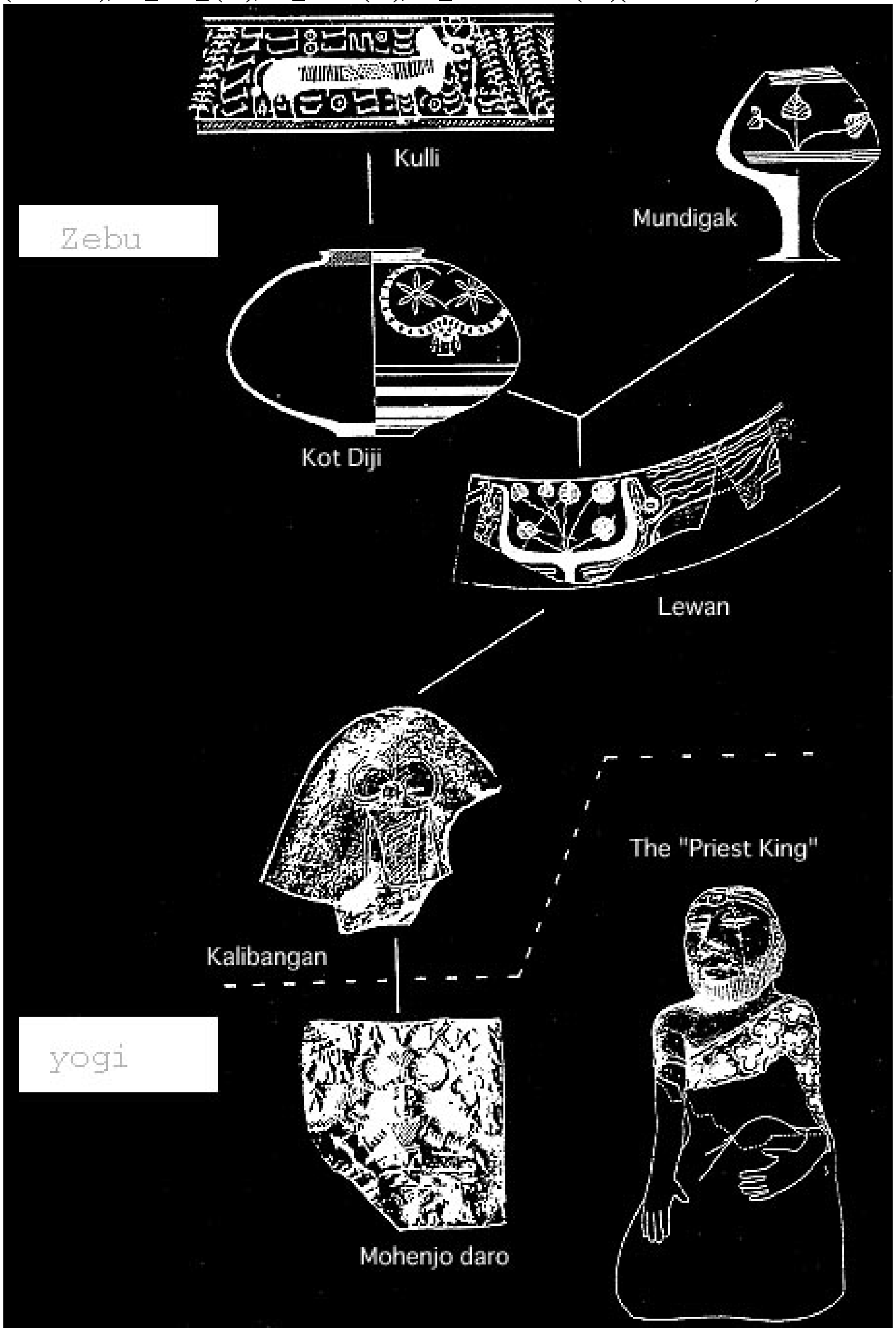
Again, a bronze weapon occurred with a mummied queen of the Seventeenth Dynasty (BC 1750). Useful in war, the implement, probably when in the stone period, rose to be a symbol of the Deity: hence, doubtless, the hachet votives of the later Bronze Age without edge to serve for work or weapons, and intended only for religious use….From Egypt the axe passed into the heart of Africa. Here it still serves, before and after use, as a medium of exchange; and this circulation from tribe to tribe explains the various forms that have overspread the Dark Continent. " (pp. 89-90). Kit.a_r or kat.a_ri (After Fig. 149 89 in: Richard F. Burton, 1884, *The Book of the Sword*, New York, Dover Publications, Inc., p. 140). The shape of this 'Hindu kit.a_r' is analogous to a sign and its variants found in inscriptions of the civilization.

kat.t.a_ri trident of S'iva (**Tan-ippa_. ii,160,399**) (Ta.lex.) **kat.a_ri, kat.ha_ri** a sort of dagger (Ka.); **kat.a_ra, kat.a_ri, kat.ha_ri** (Te.); **kat.t.a_ri** (Ta.); **kat.t.a_ra, kat.t.a_ri** (Ma.); **kat.a_r** (H.M.)(Ka.lex.) **kat.t.a_ri** cross-hilted dagger (**Kalaicaic. 83**)(Ta.lex.) **kati.r- (katrc-; < katy-tayr, katy-tarc-)** to cut (Ko.); **kan:keyt, kan:ki.t** sickle [**kan. koty** dagger-shaped knife burned with the corpse (To.)(DEDR 1166); **kan.-** handle]; **katti** knife, cutting instrument, razor, sword, sickle (Ta.); knife (Ma.Kod..Tu.); knife, razor, sword (Ka.); **katy** billhook, knife (Ko.); **kati.r** to cut (Ko.); **kan. koty** dagger-shaped knife burned with the corpse (To. cf. **kan.a** arrow); **katte** knife (Tu.); **katti** cock's spur (Go.); **ka_ti** knife attached to the cock's spur (Go.)(DEDR 1204).

ka_tar, ka_tri scissors (Kon.lex.) **kat.t.a_ri_**, **kat.t.a_raya** knife (Pkt.); **katara** dagger (Ash.); **katere** (Pr.); **kta** (Kt.); **kat.a_** (Wg.); **kat.e_r** (Dm.); **kat.e_ri_** small dagger (Dm.); **kata_ri** knife (Tir. <Ind. or Psht.); **ka_t.are** spear (Pas'.); **kat.a_ro** large knife (Gaw.); **mus.-kat.a_ri_** dagger (Gaw.); **kat.a_r** (Kal.); **kuter** knife, dagger (Kho.); **ka_t.er** knife (Bshk. **kat.a_re_i** (Sv.); **kat.o_ro** dagger (Phal.); **kat.a_ro** long knife (Sh.); **kat.a_ro** knife (S.); **kat.a_r** dagger (P.N.Or.Mth.H.G.); **kat.a_ra_** large dagger (P.); **kat.a_ri_** small dagger (P.); dagger (Ku.A.Bhoj.H.G.); knife (OMarw.); khukri (Or.); **kat.a_r**[i], **ka_t.a_r** dagger (B.); **ka_t.a_ri** billhook (B.); **ka_ta_ri** shears (B.); goldsmith's scissors (Or.); knife (N.); **kat.a_ra** chopper, billhook (Or.)(CDIAL 2860). **karta** knife (Skt.) [cf. Avestan. **kareta, kareti** knife]; **ka_ti** shell-cutter's saw (B.); **ka_ta_n** large sacrificial knife (B.); **kata_** small billhook (Or.); **ka_ti_** knife (Or.); **ka_t** brazier's cutters (Bi.Mth.); **ka_t** shears for shearing sheep, cock's spur (H.); **ka_ta_** knife for cutting bamboos (H.)[**katta_** small curved sword (H.); **katti_** knife (H.); **kat.t.i_** small sword (H.) < EP.]; **ka_tu~** knife (G.); **ka_ti_** knife, saw (G.); **ka_ti_** cleaver (M.[?< **ka_rti** (CDIAL 3069).][To distinguish from **katt** spin < **kartati**, MIA forms extend with **kat.t.** replacing **kr.ntati** : **kartavo** to be cut off (NiDoc.); **kartati** cuts (Skt.); **kattai**, **kat.t.ai** cuts (Pkt.); **kat.** (Pas'. > **kat.** Parachi. Iranian]; **kat.un**, **kat.n.o_** cuts (K.); **kat.an.u** (S.); **kat.t.n.a_** (P.); **ka_t.n.o** (Ku.);

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

ka_t.nu (N.); **ka_t.iba** (A.); **ka_t.a_** (B.); **ka_t.iba_** (Or.); **ka_t.ab** to reap (Bi.); **ka_t.ab** to cut (Mth.Aw.); **ka_t.na_** (H.); **ka_t.vu~** (G.); **ka_t.n.e~** to cut (M.)(CDIAL 2854).



The stone sculpture of "Priest" from the Civilization may have originally had a horned head-dress affixed to the back of its head. Graphic reconstruction of the "Priest" [courtesy of Professor Michael Jansen (RWTH, Aachen University)] After http://bosei.cc.u-tokai.ac.jp/~indus/english/2_3_02.html

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

The zebu is: ad.ar d.an:gra **(Santali); rebus:** aduru **'native metal' (Ka.)** d.han:gar **'blacksmith' (WPah.) The bull is tied to a post.** tambu **= pillar (G.); stambha id. (Skt.) Rebus:** tamba **= copper (Santali)** tamire **= the pin in the middle of a yoke (Te.) Rebus:** ta_marasamu **= copper, gold (Te.)**

Woman with horns and two stars: **ko_la** = woman (Nahali); rebus: **kol** 'metal' **ko_d.u** 'horns' (Ta.); **kod.** artisan's workshop (Kuwi) **ko_l.** = planet (Ta.); **kol** 'metal'; a pair (planets): **sagal.a** = pair (Ka.); **saghad.i_** = furnace (G.)

Ficus glomerata: **loa, kamat.ha** = ficus glomerata (Santali); rebus: **loha** = iron, metal (Skt.) kamat.amu, kammat.amu = portable furnace for melting precious metals (Te.) **kampat.t.am** = mint (Ta.) kammat.i_d.u = a goldsmith, a silversmith (Te.)

Seated person adorned with horns: **kamad.ha** = a person in penance (G.) Rebus: kamat.amu, kammat.amu = portable furnace for melting precious metals (Te.) **kampat.t.am** = mint (Ta.) kammat.i_d.u = a goldsmith, a silversmith (Te.) **cu_r.i** = bangles (H.); rebus: **culli** = fireplace, kiln (Ka.) The seated person's face is like a tiger's mane: **cu_r.i**

Priest: **tammad.a, tammad.i** = an attendant on an idol (Ka.); tammal.ava_d.u, tammal.i, tammad.i, tammali, **tambal.ava_d.u** (Te.) Rebus: **tamba** = copper (Santali) **tamire** = hole; **t.ebra** = three (cf. glyph of trefoil inlaid on the uttari_yam – upper garment); Rebus: **tamara** = tin (Ka.)

me~t = the eye

me~t me~t nepel = v. see face to face

mer.ed, me~r.ed iron; **enga mer.ed** soft iron; **sand.i mer.ed** hard iron; **ispa_t mer.ed** steel; **dul mer.ed** cast iron; **i mer.ed** rusty iron, also the iron of which weights are cast; bicamer.ed iron extracted from stone ore; **balimer.ed** iron extracted from sand ore; **mer.ed-bica** = iron stone ore, in contrast to **bali-bica**, iron sand ore (Mu.lex.)

mlecchamukha = copper (Skt.); what has the copper-coloured complexion of the Greek or Mahomedans]. mer-iya = a rock; mer-ayu = to shine, glitter (Te.lex.) **mer** = a kind of large copper or brass pot (G.lex.) cf. **melukka** = copper (Pali); mleccha = copper (Skt.)

mr..eka = goat (Te.); mlekh (Br.) **mer.h, mer.ha_,** me~d.ha_ ram (H.), med.hia_o (Dh.Des.) ram, goat, sheep (G) mid.iyo = having horns bent over forehead (G.)(CDIAL 10120). **me~r.a_, me~d.a_** = ram with curling horns (H.)(CDIAL 10120). me_t.am = goat (Ta.lex.) [cf. the pictorial motif of antelope with head turned backwards]. **merom me~t** = the goat's eye (Santali.lex.) **mes.a** = ram (RV 8.2.40) **mer.om** = a goat; mer.om jel = the hind of the ravine deer, *gazella bennettii*; mer.om (Santali)

mer.go = with horns twisted back; mer.ha, *m.*, mir.hi *f.* = twisted, crumpled, as a horn (Santali.lex.)

mer.hao = to entwine itself, wind round, wrap around, roll up (Santali.lex.) [Note the endless knot motif].

Substantive: **na_g** lead (K.); na_ga id. (Skt.); **nan** lead (Sh.)(CDIAL 7040).

nakar..-tal to creep, crawl along (**Kampara_. Atika_. 136**)(Ta.)(Ta.lex.) **na_ga, na_gara, na_gala** a snake, especially the coluber or <u>cobra capella</u> (Ka.)(Ka.lex.) **na_ga** snake (S'Br.NiDoc.); **n.a_ya** (Pkt.); **nay, na_, naya_** snake (Si.); **na_ga-danta** elephant tusk, ivory < snake-shaped tusk (Skt.); **na_ga** (Pali); **n.a_ya** (Pkt.); **n** (Gypsy); **naa** euphem. term for snake (Or.); **na_ng** (Bshk.); **non.** (Kt.Pr.); **nhon.** name of a god (Kal.)[<? Pers. **nahang**](CDIAL 7039). **na_kam** cobra (**Man.i. 25,195**); serpent (**Kampara_. Kalan-ka_n.. 37**)(Ta.)(Ta.lex.) **s'is'una_ka** young snake (R.); young elephant (Skt.); **susva_l.** crocodile (G.)(CDIAL 12477).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

A pattern of associations emerges from these inscribed objects: eagle is associated with (1) tiger; (2) elephant; (3) zebu bull; (4) serpent[31].

kol metal (Ta.) **kol** = pan~calo_kam (five metals) (Ta.lex.) Thus, the entwined figures of 3 or more tigers may connote an alloy of 3 or more metals.

kul, kol ‘tiger’

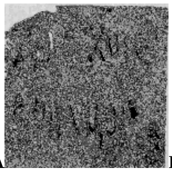
aru_ = lion (As god of devastation, Nergal is called A-ri-a) (Akkadian)
a_ru = offspring, child (Akkadian)

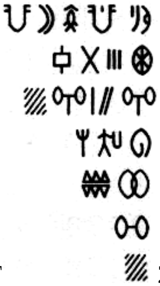
eru_, aru = eagle (Akkadian)
eruvai = a kind of kite whose head is white and whose body is brown; eagle (Ta.); eruva = eagle, kite (Ma.)(DEDR 819). Cf. Akkadian/Assyrian **aru, eru** eagle

eru_ = copper (?), bronze [eru_ = engrave, carve]; urudu_ = bronze (Akkadian)
eruvai = copper (Ta.); **ere -** a dark-red colour (Ka.)(DEDR 817). Cf. Akkadian/Assyrian **eru_** = copper (?), bronze [eru_ = engrave, carve] **eraka, er-aka** any metal infusion (Ka.Tu.); urukku (Ta.); urukka melting; urukku what is melted; fused metal (Ma.); urukku to melt (Ta.Ma.); eragu to melt (Tu.); eraka molten state, fusion; erakaddu any cast thing; eraka hoyi to pour melted metal into a mould, to cast; erako_lu the iron axle of a carriage (Ka.); er-e to pour any liquids; to pour (Ka.); to cast as metal (Ka.) erande sp. fruit, red in colour (Ka.); re_cu, re_cu-kukka a sort of ounce or lynx said to climb trees and to destroy tigers; a hound or wild dog (Te.)(DEDR 817). re_-gad.a, re_-gad.i clay (Te.)(DEDR 820). **erkem** = billhook (Go.)(DEDR 824)

kere to prepare charcoal, to carry out the process by which charcoal is made (Santali.lex.) here, ere black grease for wheels (Ka.); heregombu a horn or hollow piece of bamboo in which such grease is kept (Ka.) (Ka.lex.) ere a dark-red or dark-brown colour, a dark or dusky colour (Ka.); er-e, er-upu (Te.); eruvai blood, copper (Ta.); irumpu iron (Ta.); inumu (Te.); irul. the colour black (Ta.); ere black grease for wheels; soil of a dark colour, black soil (Ka.)(Ka.lex.)

The longest epigraph occurs with glyphs and sign inscribed on a multi-faced seal. This indicates that what is sought to be conveyed is a series of ‘sets’. The composition of the epigraph is unlikely to be a sentence. The signs could be a set of property items of the owner of the inscribed object, in this case, a seal.

m0326A  m0326B m0326C

m0326D m326E m0326F  2405

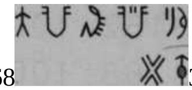
A similar interpretation is possible for a seal impression from Kalibangan with about 20 ‘signs’:

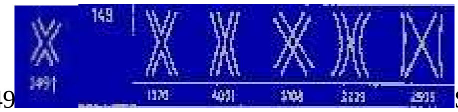
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Kalibangan089A14c 8101

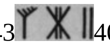
khod.rao = to cut, to scrape; khoda = to tattoo, to prick, as when tattooing; **khodna (M.), khudni (F.)** the male and female members of two tribes, one semi-hinduized and the other semi-mohammedanized, who gain a subsistence by tattooing (Santali.lex.) **khodao** = to carve, as letters on a stone; dhiri reak pat.are gel hukum khodao kateye emadea, he wrote the ten commandments on a stone slab and gave it to him (Santali.lex.) **khodro** = rough, unpolished (Santali.lex.)

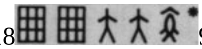
ku_d.ali = a meeting of several roads (Te.lex.) ku_d.alir-a_yi = a boundary stone, a corner stone (Te.lex.)

m00683108 [Note the sign on line 2 depicting the cross-roads, perhaps a variant of

Sign 149

Sign 149 and variants

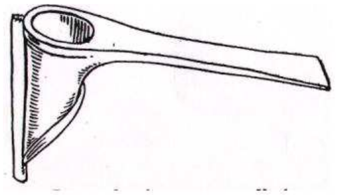
h0434077

urseal189902 Prob. West Asian find Pictorial motif: Pict-45 Bull mating a cow. Seal and impression (BM 123059), from an antique dealer, Baghdad; script and motif of a bull mating with a cow; the tuft at the end of the tail of the cow is summarily shaped like an arrow-head; inscription is of five characters, most prominent among them the two 'men' standing side by side. To the right of these is a damaged 'fish' sign.cf. Gadd 1932: no.18; *Parpola, 1994, p.219. Gadd Seal 18. BM. "Above there is an inscription of five characters, most prominent among them two 'men' standing side by side. To the right of these (in the impression) is a damaged 'fish' sign, and to the left two others which closely resemble CCXCVII and XXVIII of the Sign Manual in M. Below is a unique representation of a bull in the act of mating with a cow; the head and legs of the cow are rather obscured by damage and the tuft at the end of the tail is summarily shaped like an arrow-head, but nevertheless the purport of the device is quite clear."(C.J. Gadd, Seals of Ancient Indian Style Found at Ur', in: G.L. Possehl, ed., 1979, *Ancient Cities of the Indus*, Delhi, Vikas Publishing House, p. 119).

Axe-head, knife, and hoe, Tell Sifr, Mesopotamia [British Museum, 1904, *A Guide to Antiquities of Bronze Age*, London, British Museum, pp. 67-68; Fig. 123]. 'In Babylonia the copper implements (axes, lance-heads etc.) of Tello go back probably beyond 4000 BC, the bronze vase of the time of Ur Gur (about 2500) and the bronze statuette of Gudea proving the extreme antiquity of copper, and showing that

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

bronze-working cannot have been introduced very much later than 3000 BC. The discoveries in graves at Mukayyar and Warka (the Biblical Ur of the Chaldees and Erech respectively) throw further light upon metallurgical knowledge at a period estimated between 2500 and 1000 BC. The graves contained weapons of stone, copper, and bronze; and in some of the latest, iron also appears, but is only used for ornamental purposes: lead and gold also occurred in the tombs, but no silver. At Tell SIfr, north of Mukayyar, between the Tigris and the Euphrates, a number of copper or bronze implements and weapons have been excavated. They include axes and adzes with shaft-holes at one end, semi-circular tools split at the butt, straight daggers with riveted tangs, and curved knives; one of the latter on analysis proved to contain no tin. These objects, some of which are in the collection (fig. 123), are said to have been all found together, and are conjectured to date, if not from the first half of the second millennium, at least from between 1500 and 1000 BC, a period towards the close of which iron was coming into use. That iron was not generally employed much before the year 1000 BC may be assumed from the existence of a bronze sword with a cuneiform inscription, giving the name of an Assyrian king (Abad-nira_ri I) of the fourteenth century, as well as from the presence of bronze weapons in the ruins of Nimrudf,m a city which was only founded abourt 1300 BC...The forms of Babylonian and Assyrian weapons and implements are simple, and there is no attempt at decoration. The swords have only one edge, and socketed selts are absent, though the axes with split butts represent a type from which a socketed celt might easily be derived.' [British Museum, 1904, *A Guide to Antiquities of Bronze Age*, London, British Museum, pp. 127-128].

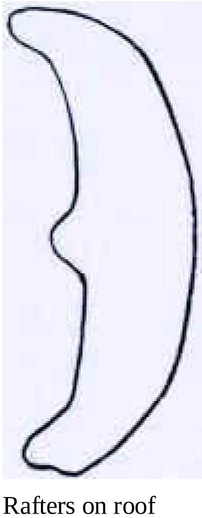


Sumerian single-bladed axe, Ur. [V. Gordon Childe, 1929, *The Most Ancient East: the oriental prelude to European prehistory*, London, Kegan Paul, Trench, Trubner and Co. Ltd., Fig. 72 a].

Sumerian transverse axe, Ur. [V. Gordon Childe, 1929, *The Most Ancient East: the oriental prelude to European prehistory*, London, Kegan Paul, Trench, Trubner and Co. Ltd., Fig. 73]

Sumerian axe, Kish [V. Gordon Childe, 1929, *The Most Ancient East: the oriental prelude to European prehistory*, London, Kegan Paul, Trench, Trubner and Co. Ltd., Fig. 74 a].

'The axe-heads were of course provided with a shaft-hole and include both the sloping and the transverse type...It is, however, curious that the shaft-hole was still formed in some cases by folding the butt over into a loop.' (Childe, opcit., p. 178).



Sumerian axe, Kish [V. Gordon Childe, 1929, *The Most Ancient East: the oriental prelude to European prehistory*, London, Kegan Paul, Trench, Trubner and Co. Ltd., Fig. 74 b.]
'...segmental baldes with a scalloped back mounted in curved wooden shafts, derived from the boomerang-club formed a sort of weapon intermediate between the axe and the sword. They constitute the prototypes from which the harpe was subsequently evolved'. (Childe, opcit, p. 179).

pin.d.ha, pin.d.he = a ridge, as of a rice field; an embankment, as of a tank, dam etc. (Santali.lex.)
pin.d.a = a raised platform round a house occupying the space between the wall and the drip of the eaves (Santali.lex.)

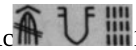
pin.d. = an altar, a small raised platform for the purpose of an altar (Santali.lex.)

Rafters on roof

Glyph: *va.cr* eaves (Ko.); *va_cu_ru* id. (Te.)(DEDR 5338)..

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

va_cci adze (Te.); adze, scraper (Ma.); *ba_ci* adze (Ka.); *ba_ci*, *ba_ji* (Tu.); va_s'i_ adze (Skt.)(CDIAL 11588; DEDR 5339).
Glyph: *bali* to pull (Kor.); *velba* to pull; pulling (Kui); *vali* to draw, pull, row (Ta.); drawing, pull, tug (Ma.)(DEDR 5282).

m0018Ac1548 Sign 318 Note the ^ ligatured on the last sign read away from the neck of the one-horned bull. The ligature ^ is vividly depicted like the neck of a horse; the ear of the horse and the eye of the horse is also seen. (No optical illusion this). The ^ could also be read as: **dhakna**, 'lid'

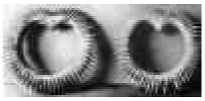
ku_d.ali va_yi = the gable end of a house, the meeting place of two roofs whose lengths are at right angles to each other (Te.lex.) If this semant. is applied to Sign 318, the inscription on m018 may be read as **d.a_kin.i_** 'sword' + **kud.ali**, 'hoe' = (**dakhna**, image: lid) (**ku_d.ali**, image: gable). Alternative: **dagad.a, dagad.o** = a large stone; a large lump of earth (G.); cf. dr.s'ad (Skt.)

bind = a pin of wood, used instead of a nail (Santali.lex.) [Note the glyph of a pin on the Dholavira sign-board].

bin.d.i = a straw stand for earthe pots, rim round the bottom of any vessel to make it stand steady (Santali.lex.)

bindu = a drop, atom (Santali.lex.) ce_rcukka = bindi_ = an ornament suspended on the forehead from the parting of the hair; a pearled spot on the forehead, i.e. mutya_labot.t.u (Te.lex.)

Glyph: *bal.e*, *bale* reepers or slips of bamboo used to fasten the rafters of a roof; *bal.ara* a kind of cornice ornamenting the beam on a wall, window or door-sill (Tu.); *val.a* crossbars that support the rafters of a roof, wooden needle driven into the rafters; val.ar large beam, smaller beam put on the main beam of a roof, big stick (Ma.); *val.ar* twig, tender branch; *val.ai* small beam, long piece of wood (Ta.)(DEDR 5309).
Glyph: *val.a* bracelet, ring (Ma.); *val.ai* bangle, bracelet (Ta.); *valaya* bracelet, ring, girdle, circle (Skt.)(DEDR 5313; CDIAL 11405, 11407).



Possibly worn on the wrists of prehistoric women some 3000 years ago: bangles (about 2 1/2 in. across) of blue glass paste, found at Harappa. Plate II. Material recovered from Mohenjodaro in the first season of excavations by Sir John Marshall (G.L. Possehl, ed., 1979, *Ancient Cities of the Indus*, Delhi, Vikas Publishing House).

2914.**<u>Image: beam laid across the roof</u>**: **san:ga, san:gi** a beam laid breadthwise supporting the roof of a house (Santali.lex.) **<u>Image: crossbeam in triangular thatch</u>**: **san:gha_, san:ga_** bamboo scaffolding inside triangular thatch, crossbeam of thatched house (Or.)(CDIAL 12862). **si~gha_ra_** triangular packet of betel (Bi.); **si~gha_r.a_** piece of cloth folded in triangular shape (H.)(CDIAL 12859).

bhindran: = to fall to the ground, to knock down (Santali.lex.).

A synonym could be:

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

m0290 2527pin.d.i_ = the calf of the leg (G.lex.) [Note the glyph on a seal].

bhin.d.iva_la, pin.d.iva_l.a, bhindama_la, pin.d.iva_la, bhin.d.ima_la, bhindipa_la = a short javelin or arrow thrown from the hand; an iron-bound club, used as a weapon (Ka.lex.) bhin.d.i-pa_la is a compound term: bhin.d.i < min.t.i instrument to thrust; + < pa_l.a ingots; i.e. some sort of tubular mechanism to catapult round stone or metallic missiles. Kaut.ilya categorises this as a weapon with piercing points.] bhindati splits (Dha_tup.); bhinatti (RV.); bhindati splits, breaks (Pali); bim.nam.ti they break pret.3 sg. bim.nida, bhinita (NiDoc.); bhim.dai pp. bhim.dia (Pkt.); bhi~dn.e~ to pierce, penetrate, soak into (M.); bindinava_, pret. binda_ to break, be broken (Si.); caus. bhinda_pe_ti (Pali); bindavanava_, binduvanava_ (Si.)(CDIAL 9496). cf. Image: javelin: vit.t.-e_r-u missile weapon, javelin (Ta.); javelin (Ma.); bit.t.-e_r-u missile weapon, dart, javelin (Ka.); bit.ing to throw, throw down (Br.)(DEDR 5393). Image: a missile: pin.t.ipa_lam a missile (Ci_vaka. 2269)(Ta.); bhin.d.iva_la id. (Skt.)(Ta.lex.) bhindama_la, bhin.d.iva_la, pin.d.iva_l.a a short javelin or arrow thrown from the hand; an iron-bound club, used as a weapon (Ka.Skt.lex.) [Note the spear used on scenes spearing a buffalo or a bull]. **bhin.d.ipa_la** short javelin or arrow thrown by hand or shot through a tube (MBh.); **bhin.d.ipa_la** (BHSkt.); **bhin.d.ima_la** (Skt.); **bhindiva_la** a sort of spear (Pali); **bhim.diva_la, bhim.d.ima_la** a sort of weapon (Pkt.); **bendi-vala, benduvala** a sort of spear (Si.)(CDIAL 9497). [Prob. this was a heavy club with a broad and bent tail end, measuring one cubit length; the weapon was used to cut, hit, strike and break; it was like a kunta (metal lance with darts and six edges) but with a big blade; used by Asuras in their fight with Ka_rtavi_rya Arjuna; cf. **Agni Pura_n.a, 252,v.15**; **S'ukrani_tisa_ra**,**IV.30-31**; loc.cit. V.R. Ramachandra Dikshitar, War in Ancient India, 1944, repr. 1987, p.106.]

me~r.he~t iron; ispat m. = steel; dul m. = cast iron; kolhe m. iron manufactured by the Kolhes (Santali); mer.ed (Mun.d.ari); **med.** (Ho.)(Santali.lex.Bodding)

me_r.sa = v.a. toss, kick with the foot, hit with the tail (Santali.lex.) cf. me_s.a = goat (Skt.lex.)

med.h = the helper of a merchant (Pkt.lex.) me_t.i, me_t.ari = chief, head, leader, the greatest man (Te.lex.) ?med.i (EI 9), also called meli, a kidnapper of victims for sacrifices (IEG). mehara = (EI 33) a village headman (IEG). mehto [Hem. Des. med.ho = Skt. Van.ik saha_ya, a merchant's clerk, fr. mahita, praised, great] a schoolmaster; an accountant; a clerk; a writer (G.lex.) mel. = tallying, balancing of accounts; a cash book; mel.van. = a mixture, a composition; mixing (G.lex.) me_r..iyar = pu_vaiciyar, ve_l.a_l.ar, i.e. agriculturists, traders (Ta.lex.)

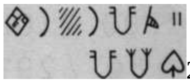
mesri_ = a class of va_n.ia_s (G.lex.) **metr.** = builder, one who creates a column (RV 4.6.2) meteva dhr.mam stabha_yadupa dya_m sthu_n.eva (Vedic.lex.) **me_t.i, me_t.ari** = chief, head, leader, lord, the greatest man (Te.lex.) mehto [Hem. Des. **med.hi** = Skt. van.ik-saha_ya: **a merchant's clerk**, fr. Skt. mahita praised, great fr. mah to praise, to make great] a schoolmaster; an accountant; a clerk; a writer (G.lex.) milakat [Ar. Milkate] property; estate; effects; chattels; goods (G.lex.) **medin** = ally, friend, companion; sahamedyedhi snigdhah (RV 10.84.6)(Vedic.lex.) But, me_dara = the basket-maker caste; a basket-maker; of or pertaining to the basket-maker caste; me_dari = a basket-maker (Te.lex.) cf. **me_stri** = a head workman (Ka.Te.M.Ma. fr. Portuguese mestre)(Ka.lex.) Could this be a re-borrowing – metr., 'builder' > mestri (Portuguese) > me_stri (Ka.)?

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

me_t.u = a heap, a stack, rick, as of hay (Te.lex.) [Note the haystack shown next to an antelope on the platform on which a horned person is seated].

me_d.hramu = the penis (Te.lex.) [Note the penis on the horned seated person].

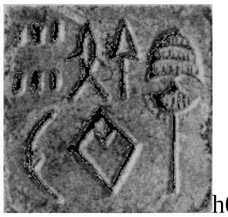
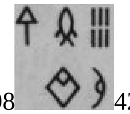
m1400At

m1400B 2851 animal. [Perhaps a ram with horizontal curving horns is shown in two parts of the tablet m1400B]

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Standard device

The standard device occurs in over 1,000 epigraphs, generally shown in front of the one horned heifer. It is suggested that this device is a ligature composed of a gimlet drill lathe superimposed on a portable furnace which is represented by the bottom vessel. The device was clearly an important part of the lives of the people who created the epigraphs; it is shown being carried in a procession; a replica of the device also exists in the round. There is one lexeme in Bharatiya languages which explains the ligatured components: **san:gad.a** The rebus substantive is consistent with other glyphs denoting the property items of braziers.

m1408At

h098

4256 Pict-122 Standard device which is normally in front of a one-horned bull.

Lothal048

7025 [On this Lothal seal, it is shown in front of an antelope].

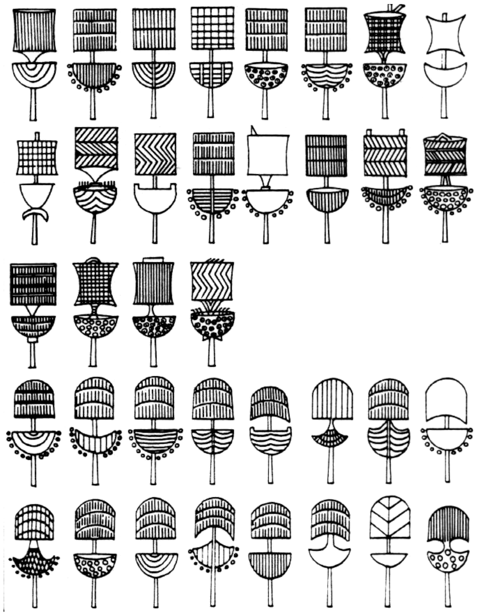
Lothal217A

Lothal217B [On Lothal seal 217, the device is shown in front of the one-horned bull, but a trough is shown in front of the buffalo].

san:gad.amu = help, friendship; a party, company, an army; san:ga_d.i = a friend, a companion (Te.lex.)

The standard device (**san:gad.a**, 'lathe, portable furnace'; rebus: battle) is associated with a warrior (**va_kara**, 'heifer, warrior'; **kandali**, 'deer-antelope, warrior'; **med.h**, 'ram, chief'); the trough is associated with a number of artisans [**d.an:gara**, 'trough, smith' or, **tagr.a**, 'trough, copper (**tagara**)]. A trough is shown, for example, with: **kol**, 'tiger, smithy or smelter'; **sal**, 'buffalo, workshop'; **d.angar**, 'bull, blacksmith'; **e_na**, 'elephant, tool' [Alternative: **kari, kalabha**, 'elephant', **karuvi, kalapa**, 'plough tools']; **badhia**, '(castrated) boar, carpenter (**badhoe**)'.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

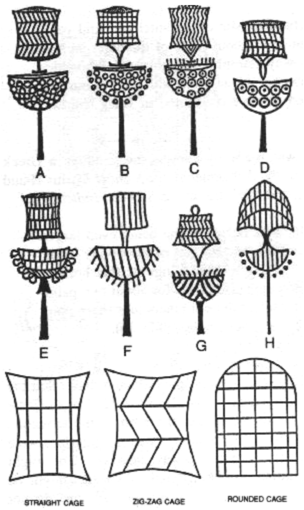


kol metal (Ta.) **kol** = pan~calo_kam (five metals) (Ta.lex.) Thus, the entwined figures of 3 or more tigers may connote an alloy of 3 or more metals.

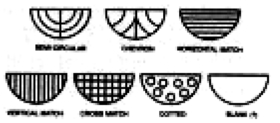
Orthography: Three components on a stele: gimlet on turning lathe; portable furnace; dotted circles on the bottom vessel

It looks like a gimlet, a drilling device to make 'pointed' holes, a device for a lapidary to drill holes in, say, beads. The wavy motion depicted on the top part of the device may be an artistic depiction of circular motion of the drill. The dotted circles on the botton part of the device may denote perforated beads.

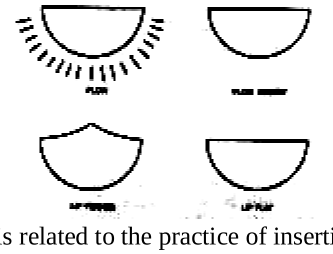
The 'standard device' motif also occurs in front of an elephant on an Allahdino seal. Allahdino (Nel Bazaar)08



Various representations of the 'standard' shown generally in front of the one-horned bull on inscriptions (Drawing by G. de Vries, cited in During Caspers, *South Asian Archaeology*, 1987, p. 250).



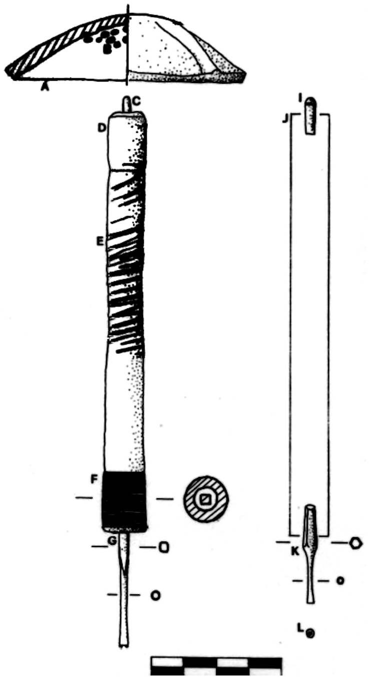
Since the 'standard device' is associated with the one-horned bull, a representation of a commander of an army of a fort, it is a reasonable hypothesis that the 'elephant' motif also was a rebus representation of some artefact related to the army, perhaps an an array or category of attack weapons. It is noted that one seal text associated with the pictorial motif, the elephant, is repeated 11 times out of about 100 clay tags found at a burnt-down warehouse at Lothal.

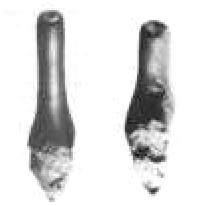


Styles of the bowl (or bottom portion of the standard); Styles of depiction of 'flow' and lip treatment on the bowl (or bottom portion of the standard); cf. Rissman 1989: 162

Styles and structure of the standard and the top portion (cage?); cf. Mahadevan 1984: 185; Rissman 1989: 162 The top portion resembles a drill-lathe and a drill-head (gimlet). The wavy lines inscribed are a stylised depiction of 'turning motion' of the lathe. The style depicted as G is related to the practice of inserting the upper pivot of the drill-head into a coconut-shell; see below.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

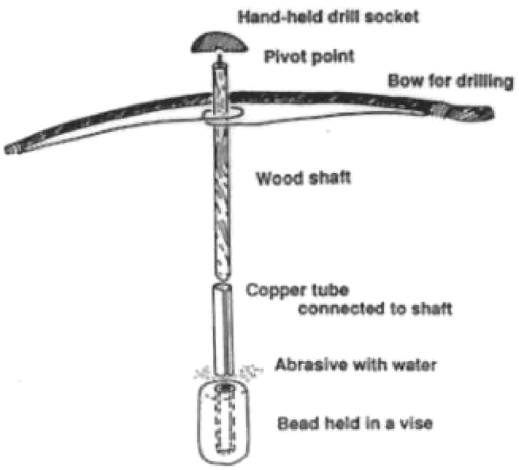




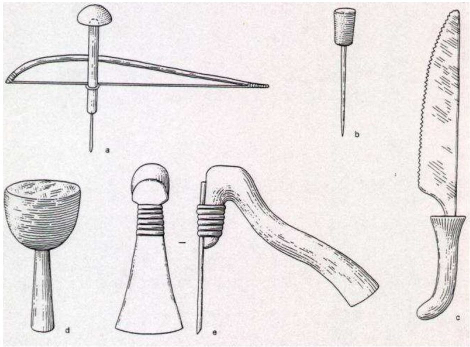
Phtanite drill-heads from the surface of MNSE area, Moenjodaro (Massimo Vidale, 1987, p. 147)

Reconstruction of a drill based on analogical comparisons with the drills used nowadays at Nagara, Gujarat, India: Upper pivot in copper is centered with the drill-head and inserted into a coconut shell. Wooden haft is used with a bow-string to churn. The phtanite drill-head is secured in the haft-hole with a thin coiling thread. The tip of the drill's working end shows the characteristic feature of the shallow hemispherical depression: a 'dotted circle'. (After Massimo Vidale, 1987, p. 148). Macro-photo of two very used drill-heads, showing the little depression at the tip of the working end; closeup of the distal ends of four drill-heads showing depth and shape of depression. cf. Piperno, Marcello, 1973. Piperno, Marcello, Micro-drilling at Shahr-i Sokhta; the making and use of the lithic drill-heads, in: Hammond, Norman Ed., South Asian Archaeology, 1973, Pl. 9.2 and 9.3 "granite drill heads used to perforate beads, prepare stone seals... use of the "bow drill" or the "pump drill" which revolved the point of the drill in an alternating rotary motion...the level of technical performance reached in this micro-drilling work was peculiar to a class of highly-specialized craftsmen who must have enjoyed a considerable social and economic position in the life of Shahr-i Sokhta." (p.128) [ca. 2700-2300 BCE].

Bow-lathe-drill. An available guide is a broken fragment of a stone relief of the second century AD from a gem-cutter's tomb in Lydia in Turkey showing a bow-lathe; the depiction of the cutting edge is lost (cf. Charleston 1964: 85, fig. 2: the drawing is a reconstruction. Rehman Dheri, where carbon-14 dates of 4400 and 4520 BCE are given for the earliest levels, is said to possess 'the richest bead industry of the contemporary sites on the subcontinent. The few round furnaces, lumps of lapis, cornelian, agate, and turquiose, and the availability of unfinished beads with stone drills intact would suggest that bead manufacturing was carried out at the site...The rich contemporary lithic industry of flint, jasper, chalcedony, and agate included microdrill heads. A cornelian bead with a drill still in the half-finished perforation confirmed their use (Durrani 1981: 204, pl. III), as at Hissar and Shar-i-Sokhta in eastern Iran and as at Chanhudaro and Lothal]. Ur. Mes-kalam-dug's grave chamber had: a shield, two gold-mounted daggers, chisels and other tools, copper jugs, silver bowls and a set of arrows.

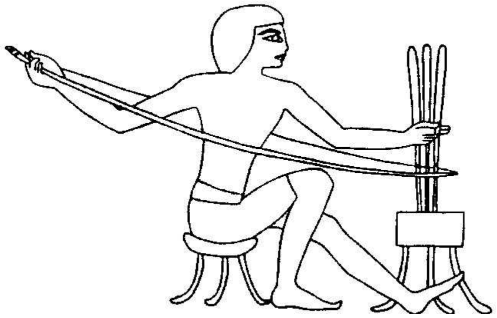


PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



Tubular drilling technique used to perforate ringstones and tiny beads. reconstruction. [After Fig. 9.9 in JM Kenoyer, 1998].

Mesopotamia; tools of the craftsmen equipped with stone or metal cutting edges: (a) drill; (b) awl or chisel; (c) saw or knife; (d) hammer; (e) adze (or axe).



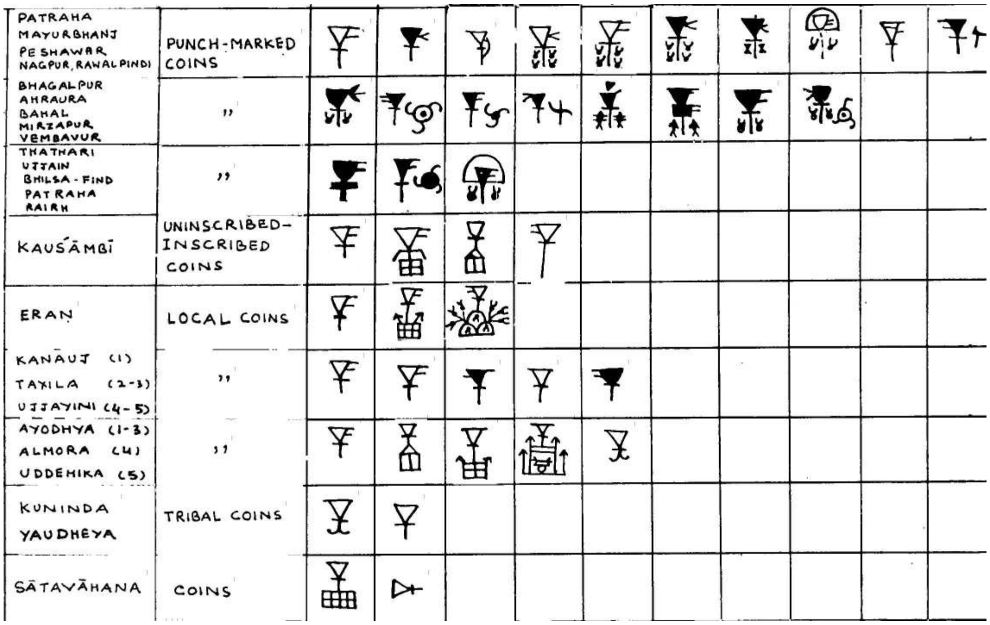
A

Hypothetical reconstruction of an Harappan drill based on the analogical comparison with the drills nowadays used at Nagara, Gujarat, India. A. Coconut shell; B. Circular depression left by the revolving pivot ©; C. Upper pivot in copper centered with the drill-head; E. Wooden haft (note the spirally oriented wear traces left by the bowstring); F. Functional extremity of the drill-haft, covered with a thin coiling thread. The same thread secures the drill-head in the haft hole; G. Drill-head manufactured out of an umbrella reed. The functional part of the tool is rounded before the point's utilization; H. Working end of the drill head showing two diamond chips hammered into the tip; I. Broken phtanite drill re-utilized as upper pivot. Note the rounded wear trace on the tip. J. Analogical hypothesis on the dimentions of the wooden haft; K. Phtanite drill-head; L. Tip of the drill's working end showing the characteristic feature of the shallow hemispherical depression. [After Fig. 66, Massimo Vidale, More Evidence on a Protohistoric Ceramic Puzzle, in: *Interim Reports Vol. 1: Reports on Field Work carried out at Mohenjo-daro, Pakistain 1982-83 by IsMEO-Aachen University Mission*, ed., Michael Jansen and Gunter Urban (Aachen: RWTH-IsMEO, 1984), p. 148]

Egyptian drawing of a craftsman drilling beads by pushing a horizontal bow which rotates the spindle holding the drill bits. From a wall painting in the Tomb of Rekhmira from Theban Necropolis, Eighteenth Dynasty. Holly Pittman, *Ancient art in miniature: near Eastern seals from the collection of Martin and Sarah Cherkasy* (1986).

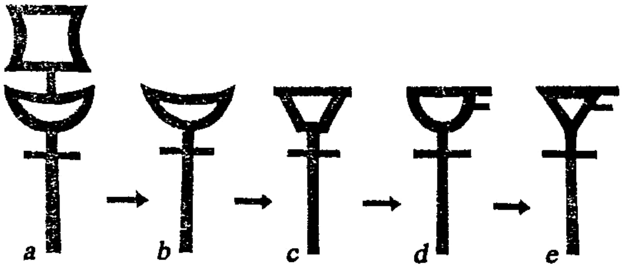
"The bow drill, clearly represented in tomb reliefs of Old Kingdom of Egypt, was the most common tool used for cutting seals (figure). Analysis of the tool marks remaining on the seals suggests that the horizontal lathe and the cutting disk were also important tools for seal carving from early in the third millennium. " Unbaked, hollow clay ball with multiple seal impressions. Late Uruk period. Louvre Museum, Paris. (Holly Pittman, Cylinder seals and scarabs in the ancient Near East, in: Jack M. Sasson (ed.), *Civilizations of the Ancient Near East*, pp. 1589-1595).

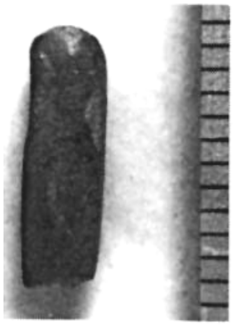
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



[Pl. 55, Standard symbol on punch-marked coins and on local coins; this is paralleled by the standard device in front of the one-horned bull shown on many inscribed objects of SSVC].

Note that one of the pendants looks like the 'device' normally found in front of the one-horned bull, the san:gad.a, portable brazier and lathe (also meaning, battle).



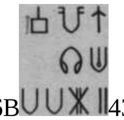


Particulars of a broken phtanite drill-heads Mohenjo-daro. MNSE Area. Drill-heads re-function of upper drill pivot, recovered from the surface of the site. [After Fig. 64-65, Massimo Vidale, More Evidence on a Protohistoric Ceramic Puzzle, in: *Interim Reports Vol. 1: Reports on Field Work carried out at Mohenjo-daro, Pakistain 1982-83 by IsMEO-Aachen University Mission*, ed., Michael Jansen and Gunter Urban (Aachen: RWTH-IsMEO, 1984), p. 148]

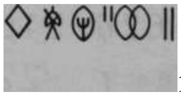
Schematic diagram showing the evolution of the standard device (a) found normally in front of the one-horned bull on inscribed objects. Mahadevan relates the evolution into indra-dhvaja (‘triangle-headed standard’) (b) triangle-headed standard Indra-dhvaja with trapezoid-shaped trough; (c) with hemispherical bowl; (d) with wineglass-shaped cup (e) [After Fig. 39.10 Iravatham Mahadevan, The sacred filter standard facing the unicorn, p. 444 in: *South Asian Archaeology*, Helsinki] The glyph shown in (e) is also shown on the as.t.aman:galaka ha_ra. What was a standard device in the days of the Sarasvati Sindhu Civilization, mature periods, becomes a symbol, the Indra dhvaja.

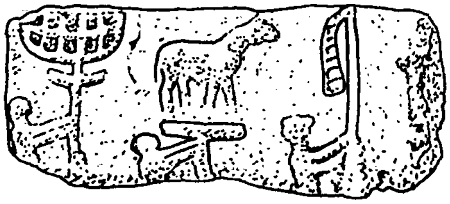
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

The portable nature of the device is also represented on glyphs with a person carrying the device on his shoulder.

h196A h196B4309 Tablet in bas-relief h196b Pict-91: Person carrying the standard. h196a The standard.

m0490At m0490BCt 1605 Tablet in bas-relief

m0491At m0491BCt 1608 Pict-94: Four persons in a procession, each carrying a standard, one of which has the figure of a one-horned bull on top.



Mohenjo-daro. A procession depicted on a terracotta tablet. [After Marshall 1931, Pl. CXVIII,9; cf. Fig. 5.6 in JM Kenoyer, 1998]. Is this a representation of a public ceremony which included carrying standards topped by objects representing important motifs of the civilization? Not all animals with which the people of SSVC were familiare are used as pictorial motifs; for example, they were familiar with peacocks, hooded cobras, monkeys, squirrels, mongooses and onagers (wild asses); the pictorial representations of these animals are not found on the square stamp seals.

A procession carrying (fr. right) a pennant, a one-horned bull and a standard device is depicted on an inscribed object. This seems like an army on the march. [cf. bavaramu = a battle, fight, combat, war (Te.)]

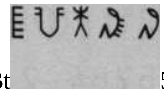
h384 h434 h399

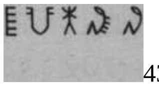
h887Ait h887Bit [Incised tablet] Pict-122 Standard device which is normally in front of a one-horned bull.

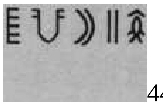
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

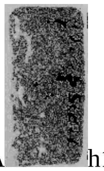
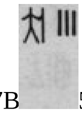
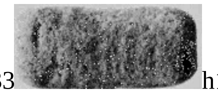
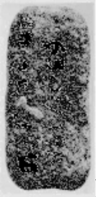
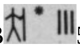
h194A h194B h195A h195B

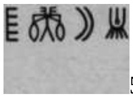
h739At h739Bt h740At h740Bt

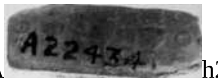
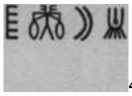
h741At h741Bt5263

h742At h742Bt4320

Standard.h291A h291B 4440 Standard.

h197Ah197B5333h198Ah198B5331

h226A h226B 5243

Standard. h227Ah227B 4322 Standard.

The glyph is a ligature. Ligature elements are: top, lathe and gimlet (with rotating motion indicated by wavy lines); bottom, portable furnace (with smoke emanating from the bowl) ligatured with dotted circles (indicating bored beads); a shaft which is attached to the furnace (indicating its portable nature).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

kan.d. ‘altar, furnace’ (Santali) **kanduvu** = an oven; an iron pan; kandakamu = a ditch, trench (Te.lex.)

kan.t.i = a gold wire with a golden plate attached, being an ornament for the neck and breast of men (and women)(Ka.lex.) [Note the ornaments worn by the seated person].

kan.d.i = a hole, an opening (Ka.Ma.Tu.); gan.d.i (Te.)(Ka.lex.)

kan.d.eya = a kind of sword; **kad.i** = to cut (Ka.lex.)

s'agad.i_ (G.) = lathe **san:ga_d.o** a lathe; **sa~gha_d.iyo** a worker on a lathe (G.lex.) **sa~gha_r.o** lathe (G.); **sa~gad.** part of a turner's apparatus (M.); **sa~_ga_d.i_** lathe (Tu.)(CDIAL 12859). **jan.d.i_** a lathe (S.lex.) **jan.d. khan.d.** ivory (Jat.ki.lex.) Perh. **san:gad.i** lathe > **an:ga_d.i** shop? cf. **sam.yuta** joined with (AV.); joined (Pali); **sam.jua** (Pkt.); **sam.yauti** mixes (VS.)(CDIAL 12988). cf. **ad.a, ad.e, ad.i** the piece of wood on which the five artisans put the article which they happen to operate upon, a support (Ka.)(DEDR 86).

<u>Rubbing, friction</u>: **san:ghat.i** that crushes: a millstone; **san:ghat.isu** to strike (one thing) against (another); to crush; **san:ghat.t.a** rubbing together, friction; striking against, touch; **san:ghat.t.ana** id.; **san:ghat.t.ita** struck against, touched; **san:ghars.an.a** rubbing against (another)(Ka.lex.)

jan:gad.iyo (G.) Military guards who carry government treasury from one place to another; san:gad.amu (Te.) = army

san:gha_d.o, saghad.i_ (G.) = firepan; **saghad.i_, s'aghad.i** = a pot for holding fire (G.)[cula_ sagad.i_ portable hearth (G.)] **agud.e** = brazier (Tu.)

jan:ga a battle, a war; a noisy quarrel (G.lex.) san:ga battle (RV)(CDIAL 13082). sanga_meti to fight; to come into conflict with; samgha_ta striking, killing, murder (Pali.lex.) sam.gra_ma = war, battle (AV 5.21.7; 11.9.26; TS 2.1.3.1; 8.4); sam.gha_ta battle (Ka_t.haka Sam.hita_ 29.1; VS 1.16; S'Br. 1.1.4.18); cf. *Vedic Index*, II, pp. 417-18.
jan:gad.iya_ pl. military guards who carry government treasury from one place to another (G.lex.)

Standard device with dotted circles decorating the portable furnace (with emanating smoke); a gimlet is ligatured on top of the standard with wavy lines denoting churning, turning motion (of a lathe). **sangha_d.o (G.) = cutting stone, gilding; san:gatara_s'u_ = stone cutter; san:gatara_s'i = stone-cutting; san:gsa_ru karan.u = to stone (S.), can:katam = to scrape (Ta.), san:kad.a (Tu.), san:kat.am = to scrape (Skt.)**

Stone cutter

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

<table>
<tr>
<td>

Dholavira: Approach Steps in the North Gate (Courtesy ASI)

san:gatara_s'u_ = stone cutter [The evidence for the work of the stone-cutters is provided by the ancient settlement of Dholavira, not too far from the Gulf of Khambat, where a Neolithic settlement dated to ca. 10,000 years ago has been found on the sea-bed on the banks of two submerged rivers, possible extensions of River Tapati.]</td>
<td>

Dholavira: Broadway and a drain (Courtesy ASI)</td>
</tr>
</table>

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

san:gad.a, portable furnace, lathe; **san:gha_d.iyo**, a worker on a lathe; san:gha_ta, killing; jan:gha_d.iyo, military guard accompanying treasure into the treasury (G.)

See the ligatured lathe, with smoke emanating from a portable furnace (m008: **san:gad.i**); see the cage-like component on the device (m026: **ku_t.u**); see the device carried on a person's shoulder (h196); see the pointed edge of the top part of the device, suggesting a gimlet of a lathe on inscribed objects (m1203: **tamiru**); the device is also known from Harappa as an ivory object in the round (discovery by Meadow and Kenoyer during the archaeological campaign at Harappa in 1998).

sam.gha_d.a, sam.gha_d.aga, sam.gha_d.i_ pair (Pkt.); sam.gha_r.i pair of fish roes, two rolls of thread for twisting into the sacred thread (Or.); san:gad.am double-canoe (Ta.); jan:gala (Tu.); san:gala pair; han:gula, an:gula double canoe, raft (Si.)(CDIAL 12859). sangha_t.i_ one of the three robes of a Buddhist (Pali.lex.) san:gad.i (Te.) = a pair

In the Sa_m.khya Ka_rika_ of I_s'vara Kr.s.n.a (ca. 2nd cent.), there is a remarkable, technical term: **san:gha_ta.**

san:gha_tapara_rthatva_t
trigun.a_diviparyaya_dadhis.t.ha_na_t

purus.osti bhoktr.bha_va_t kaivalya_rtha pravr.ttes'va (Verse 17)

[Kapila is the founder of the Sa_m.khya philosophy. He had a disciple, A_suri. A_suri's disciple was Pan~ca S'ikha_. Other followers are: Vod.hu, Devala, Sanaka, Vindhya_va_sa, Vars.agan.ya, Jaigi_s.avya (perhaps a contemporary of Pan~ca S'ikha_). Is'vara Kr.s.n.a of the Kaus'ika family is listed as a teacher in Tattva Kaumudi of MM Ganganath Jha].

Trans. The spirit exists because (a) the aggregate is for another's sake; (b) of the absence of three gun.as and other properties; (c) there must be some controller; (d) there must be some experiencer; and (e) of the tendency of activities towards final beatitude. In this translation, the terms are elaborated as: **san:gha_ta**, (because) all composite products; **para_rthatva_t**, are for the sake of another's use.

Thus, **san:gha_ta** is a composite product. Thus, when a standard device is shown in front of, say, a one-horned bull, the device, i.e. **san:gad.a** connotes a composite product, created or alloyed with cut stones (or minerals). The inscription on an inscribed object depicting such a device can, thus be interpreted as a list of 'composed (alloyed)' products.

san:gha_r.iba_ to mix many materials, stir boiling curry, tie two cattle together and leave to graze (Or.) (CDIAL 12859,12860). to mix many materials, stir boiling curry, tie two cattle together and leave to graze (Or.) (CDIAL 12859,12860).

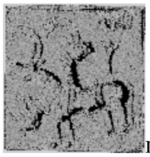
sa~gad. = a body formed of two or more fruits or animals or men and linked together (M.)(CDIA 12859). san:gha_r.iba_ tie two cattle together and leave to graze (G.)(CDIAL 12860). saga_d.i_ = Skt. yugalam, a couple (Hem.Des. G.lex.) [Note the ligaturing techniques on inscribed objects].

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

frame of a building = **sa~_ga_d.a** (IL 2972)

m1171 Amri06 Ligatured animal **san:gad.i** = joined animals (M.) san:gad.a = army; jan:gad.iyo = military guards who carry government treasury from one place to another; ja_n:gad.= things given for approval (taken without definite settlement of purchase).

The ligatured animal may connote the heads of a short-horned bull, a one-horned bull and an antelope ligatured to the body of a bull – a rebus representation of three people working together: va_kara (warrior), d.han:gar (blacksmith), mer.h (clerk of a merchant). Alternative: three minerals: **damr.i** 'heifer'; **ta_mbra** 'copper'; **bali** 'bull'; **bali** 'iron ore'; melh 'goat'; **melukka** 'copper'.

m1170a 1382 Composite animal Is the ligatured 'comb' glyph (bakhor.) + vad.d.h, 'ears of corn'; **bad.d.ha_,** 'stumps of stalks' [Rebus: **bad.hoe** 'carpenter']; alternative: **pasra** 'sprout'; **pajhar.** 'furnace'. Alternative decoding of Sign 176: Comb **kangha** (IL 1333) ka~ghera_ comb-maker (H.) **kan:g** = brazier, fireplace (K.)(IL 1332) Portable brazier; **ka~_guru, ka~_gar** (Ka.) whence, large brazier = **kan:gar** (K.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

d.aula_ = upper arm (IL 4982)

da_ula_, d.a_ula_ = a gold or silver washer, one who washes the sand of a river to obtain gold (P.lex.) daulat = wealth, property; daulatan = wealthy, possessed of property (Santali.lex.) daulat = wealth, money; daulat kha_na_ = a treasure house (P.)

d.ha_la, d.a_lu = shield (Te.lex.)

dauli a weeding knife, of iron or wood; instrument for weeds (Santali.lex.)

Carrying on shoulders d.ehka (Kui), d.e_k = to carry on shoulder (Mand.); d.e_ka (IL 4110)

cekil=on the shoulders (Ta.)
te_kai-y-a_t.t.am (Ta.)
tegal, tegal. = shoulder (Ka.), cekil, cuval = upper part of the shoulder (Ta.) tega (Santali)

Overflow, brimful tekul.am = full, overflow (Ta.), **teke** = brimful (Tu.)

Sprout tegal (Tu.) tegl (Tu.)
Rim **deg, dege** (Kon:kan.i)

deko = a Hindu (Santali)

Retreat, flee tege (Ka.)

Cauldrond.hegi (S.)

Boat d.e~_gi (Bhoj.)
Pillar placed at the junction of 3 boundaries = **tehr.a** (Santali)
t.eka = prop (OAw.)

hako and **atka** (axe and breast-plate)

atka, armour (breast-plate or coat of mail) or axe

atka axe or armour (breast-plate or coat of mail) (R.gveda)

atka = robe; Gk. ασχοζhose;μεοχοζ (Surya Kanta, 1989, A *grammatical dictionary of Sanskrit (Vedic)*, Delhi, Munshiram Manoharlal, p.9). The gk. atkos, 'hose' = (historical) breeches or pl. short trousers fastened just below knee, now chiefly worn for riding or as part of ceremonial dress; Origin OE hosa, of Germanic origin. The Greek form thus attest to the explanation of **atka** in Vedic times, as a tight-fitting breast-plate, armour or coat of mail. cf. atuku, atiku, aduku = to cling together, to be fit (Ka.lex.)

RV 8.41.7: ya a_svatka a_s'aye; 1.95.7: ucchukramatkamajate 'sa_rabhu_tam rasam'; 1.122.2: stari_na_rtkam vyutam vasa_na_ 'aktam satatam va_ ru_pam'; 4.16.13: atkam na puro jarima_ vi dardah 'vayo vis'es.am ru_pamiva'; 6.29.3: vasa_no atkam 'satatagamana s'i_lam a_tmi_yam ru_pam'; 9.69.4: atkam na niktam 'kavacamiya'; 10.95.8: saca_ yada_su jahati_s.vatkam 'atka iti ru_pana_ma'; atka is also interpreted as an Asura in 10.49.3: ahamatkam kavaye s'is'natham yathai 'a_ccha_dakam s'atruputram' (Vedic. lex.: Su_ryaka_nta)

'This word occurs frequently in the Rigveda, but its sense is doubtful. Roth, Grassmann, Ludwig, Zimmer, and others render it as 'garment' in several passages (RV 1.95.7; 2.35.14; 4.18.5; 5.55.6; 74.5; 6.41.7; 9.101.14; 107.13; Sa_maveda 2.1193), when the expressions 'put on' (vya_ or prati mun~c) or put off (mun~c) are used of it, and when it is said to be 'woven' (vyuta) (RV 1.122.2) or 'well-fitting' (surabhi) (RV 6.29.3; 10.123.7). On the other hand, Pischel (*Vedische Studien*, 2, 193-204) denies that this sense occurs, and otherwise explains the passages. He takes the term to mean 'axe' in four places.(RV 5.55.6; 6.33.3; 10.49.3; 99.9; cf. Oldenberg, *R.gveda--Notes*, I, 94, n.1)" (A.. A. Macdonell and A.B. Keith, 1912, *Vedic Index*, I, p. 16).

Sa_yan.a translates the word as 'breast-plate':

5.055.06 When you yoke your spotted mares to the poles (of your chariots), you lay aside your golden breast-plates, for you dissipate all hostility; may the cars of the quick-moving (Maruts) arrive for our good.

In the following r.ca, Sa_yan.a interprets 'atka' as a proper name:

10.049.03 I smote Atka with many weapons for the defence of the sage; with those

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

protections I preserved Kutsa; I am the slayer of S'us.n.a; I grasped the thunderbolt I who have not given the water (na_ma) of the A_ryas to the Dasyu.
In the following passage, Sa_yan.a interprets 'atkam' as 'weapons':

sa vra_dhatah s'avasa_nebhir asya kutsa_ya s'us.n.am kr.pan.e para_da_t ayam kavim anayas'c chasyama_nam atkam **yo asya sanitota nr.n.a_m**

10.099.09 Let him overthrow the mighty with powerful (weapons); he destroyed S'us.n.a for the sake of the liberal Kutsa; he humiliated Kavi, who praised him, who was the giver of form to Indra and his men. [Kutsa: kutsa_ya s'us.n.amas'us.am ni barhi_h : RV 4.16.12; let him overthrow: asya = his, s'avasa_nebhih; or, asyatu, let him throw; Kavi = Us'ana_, the son of Kavi].

Roth, Grassmann and Ludwig regard 'atka' as a proper name in both the passages in RV 10.49.3 and 99.9. Zimmer explains it as the 'armour of a warrior as a whole'. Pischel thinks that in both cases, an 'axe' is meant. (*Vedic Index*, ibid.)

atxa_ leaf, blade, plate made of sewn-up leaves (Kur.); atge leaf, palm of the hand; atgen ere to divine by looking at a leaf; atgo a diviner (Malt.)(DEDR 141) a_ku leaf, young rice not yet transplanted, young sprout of corn, any filament (Ka.); leaf, petal, seedlings of paddy for transplantation (Te.); a_ki, a_k leaf (Go.); a_ku (Kond.a. Kui. Kuwi); a_ki (Pe.Mand.)(DEDR 335) akai to sprout (Ta.); aka germ, bud, shoot (Ma.); age seedling, shoot from the root of a plant or tree, sprolut (Ka.); paddy seedling (Kod.); agge the shoot of a branch (Tu.); akra_rna_ to germinate, shoot, sprout; akhua_ seed-bud, sprout, shoot (Kur.)(DEDR 15).

[Considering that *atxa_* and *age* have comparable semant., it is reasonable to assume a concordance between R.gvedic atka (axe) and Bond.a hako (axe)].

Dotted circles

Dotted circles and vedi (yajn~a kun.d.am)

A dotted circle connotes a fire altar.

Slide 203 (Kenoyer, 2002). Steatite button seal Fired steatite button seal with four concentric circle designs from the Trench 54 area (H2000-4432/2174-3).

kandhi = a lump, a piece (Santali.lex.) [The dotted circle thus connotes an ingot taken out of a **kan.d.i**, furnace]. **ka_ndavika** = a baker; kandu = an iron plate or pan for baking cakes etc. (Ka.lex.)

kan.d. = altar, furnace (Santali) This yajn~a kun.d.am can be denoted rebus, by perforated beads (**kandi**) or on ivory (**khan.d.):**

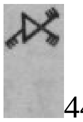
kandi (pl. -l) beads, necklace (Pa.); kanti (pl. -l) bead, (pl.) necklace; kandit. bead (Ga.)(DEDR 1215). The three stringed beads depicted on the pictograph may perhaps be treated as a phonetic determinant of the substantive, the rimmed jar, the khan.d.a

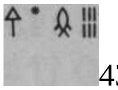
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

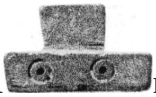
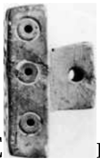
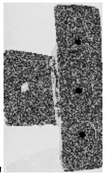
kanka: khan.d.a, xanro, sword or large sacrificial knife. **kandil, kandi_l** = a globe of glass, a lantern (Ka.lex.)

jan.d. **khan.d.** = ivory (Jat.ki) **khan.d.i_** = ivory in rough (Jat.ki_); gat.i_ = piece of elephant's tusk (S.) [This semant. may explain why the dotted circle -- i.e., kandi, 'beads' -- is often depicted on ivory objects, such as ivory combs]. See also: **khan.d.iyo** [cf. khan.d.an.i_ a tribute] tributary; paying a tribute to a superior king (G.lex.) [Note glyph of a kneeling adorant]

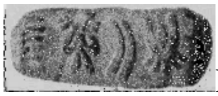
Glyph: *khan:ghar, ghan:ghar, ghan:ghar gon:ghor* ‘full of holes’ (Santali)
Substantive: *kan:gar* ‘portable furnace’ (K.)

h342A h342B 4413

Pict-121: Lozenge within a circle with a dot in the centre. 4377

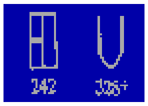
m0352Am0352Cm0352D m0352E m0352F

m1254 m1255 m1256 m1257 m1258 N
ausharo10 Slide 187 A faience button seal with geometric motif (H2000-4491/9999-34) was found on the surface of Mound AB at Harappa by one of the workmen. [Harappa 2000 find].

h228A h228B 5244 Standard.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Dotted circless are ligatured on the bottom pot of the standard device as may be seen from m008 epigraph which also shows that the device is a ligature of a gimlet + a portable furnace + staff.

Sign 243 seems to be a ligature sign 242 and sign 328 

kammat.a-ku_t.am = mint (coiner, i.e. seal-maker) workshop

Sign 286 seems to ligature sign 267 and sign 391

Sign 19 seems to ligature sign 1 and sign 171

ten:go, ‘standing’; assume responsibility; khu~t., ‘harrow’; **kut.hi**, ‘furnace’

Sign 218 seems to ligature sign 217 and sign 328

Pairing: san:gad.a, ‘furnace’; kamat.ha, ‘pot’; kammat.a, ‘mint’; sanni_, ‘vice’; sana_, ‘short sword’; sword mint furnace

Sign 32 seems to ligature sign 1 and sign 328

Ten:go, ‘standing’; assume responsibility; kamat.ha, ‘pot’; rebus: kammat.a, ‘mint’; thus, mint-in-charge

Sign 372 is a three-fold ligature with signs 397 and 162

Sign 387, corn sheaf within an oval Ligature of sign 162 and sign 373 yields sign 387.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

kut.ila, ‘bent’; **kut.ila**, ‘bronze’; pairing of the (), san:gad.a, ‘furnace’; i.e. bronze furnace; kolmo, ‘sprout’; **kolimi**, ‘furnace’

Signs 63 and 64, bird and fish

a~s = scales of fish (Santali); rebus: aya = iron (G.); **ayah**, **ayas** = metal (Skt.)

Hako, ‘fish’; **hako**, ‘axe’; bat.a, ‘quail’; **bat.hi**, ‘furnace’; the ligature () = **kut.ila san:gad.a,** i.e. bronze furnace

Sign 36, man and pincers

sanni_, ‘vice’; **sanna_,** ‘short sword’; **ten:go**, ‘standing’; rebus: ‘assume responsibility’; i.e. swordsman

Sign 90, three linear strokes and corn sheaf

pene ‘three’; pen.e ‘griddle’; kolmo, ‘sprout’; kolimi, ‘furnace’ [Alternative: pajhar. ‘sprout’; rebus: pasra ‘smithy’]

Sign 362, oval and comb

bakhor. = splicer for tassar cocoons; bakhor. = teeth of comb; pairing of the glyph: san:gad.a, ‘furnace’
Two () = san:gad.a kut.ila, i.e. bronze furnace and splicer

Alternative decoding of Sign 176:
Comb **kangha** (IL 1333) ka~ghera_ comb-maker (H.)

kan:g = brazier, fireplace (K.)(IL 1332) Portable brazier **ka~_guru, ka~_gar** (Ka.) whence, large brazier = **kan:gar** (K.)

Sign 383 ligatures signs 374, 373 and 176

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Sign 19, man and harrow

khu~t. + ten:go = kut.hi + ten:go = managing furnace.

Sign 21, man and corn sheaf

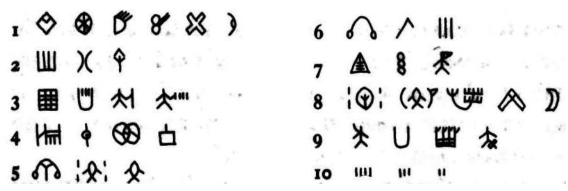
kolom + ten:go = kolimi + ten:go = managing furnace

Sign 348 ligatures with sign 162 and a pair of 172 (See paring in Sign 173)

khu~t. paired, i.e. san:gad.a kut.hi, portable furnace and (smelter's) furnace
kolom = kolimi = furnace (blacksmith's)

Sign 173 is a ligatured representation of a pair of the sign 172.

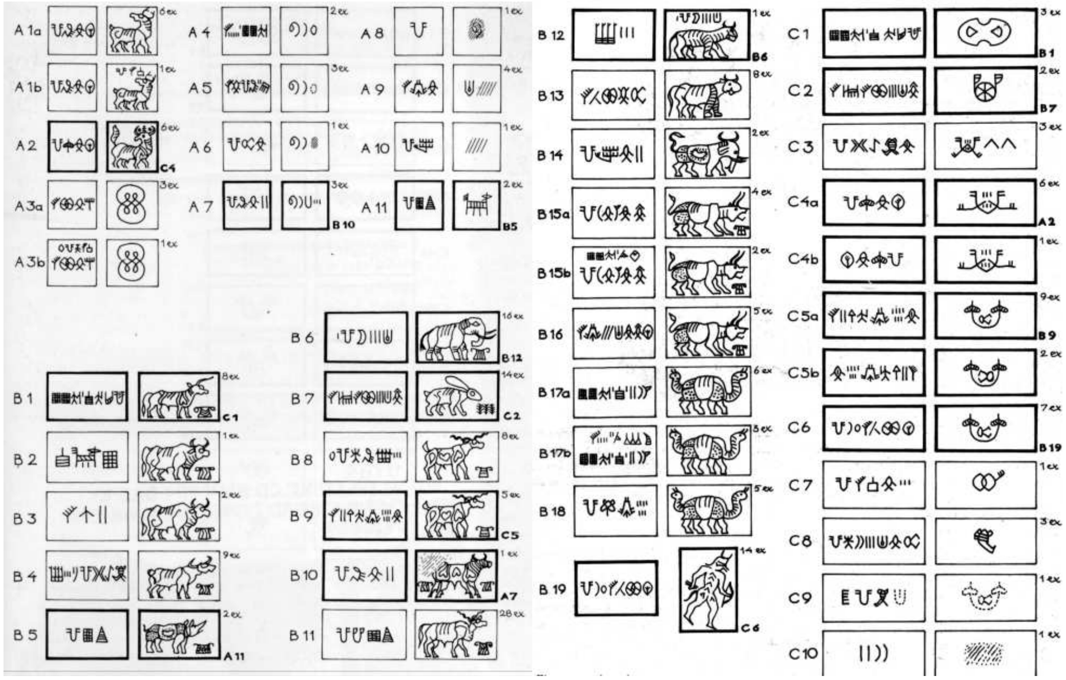
khu~t. paired, i.e. san:gad.a kut.hi, portable furnace and (smelter's) furnace



List of ten groups of similar signs in the corpus. After Parpola, 1994, fig. 6.18 [Based on affinities with other signs within texts of inscriptions].

Copper plate epigraphs; signs equivalence with pictorial motifs

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

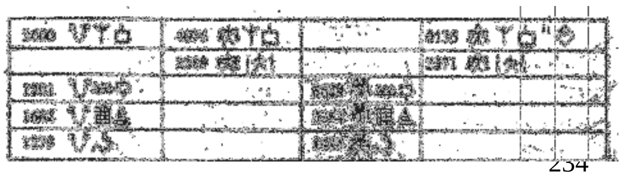


Copper tablets from Mohenjo-daro: an analysis [After Parpola, 1994, fig. 7.14]. The number in the upper right corner indicates how many identical tablets belonging to each group have been found. A group drawn with thicker lines is linked to another tablet group – with an identical inscription -- referenced in bold letters in the lower right corner.

46 tablet groups. 34 tablets are square (2.66 X 2.65 X .35 cm), 144 are rectangular (3.38 X 2.65 X .35 cm) and 39 long and narrow (rectangular) (3.3 X 2.4 X .3 cm).

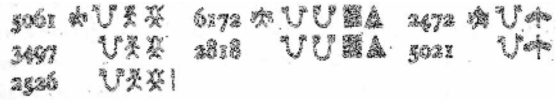
Group B12 has an inscription which connects it to group B6.

A pictogram which occurs on both C5 and C6 is connected with two different iconohgraphs – the markhor goat (B9) and the horned archer (B19). These iconographs seem to be synonyms of the texts. Mackay (1931: 401) noted that the copper tablets 'were probably used as amulets, wrapped up in some material and worn round the neck or wrist, or sewn to the clothing. This would account for the rough finish of some of them, for if worn in this way they would not have been exposed to view. It is possible that the possession of one of these amulets placed the wearer under the special protection of the deity whose particular animal was engraved upon it.'

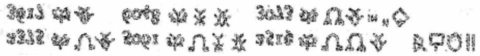


Alternations at the end of some recurring sequences of signs. [After Parpola, 1994, fig. 6.7].

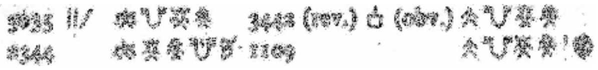
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



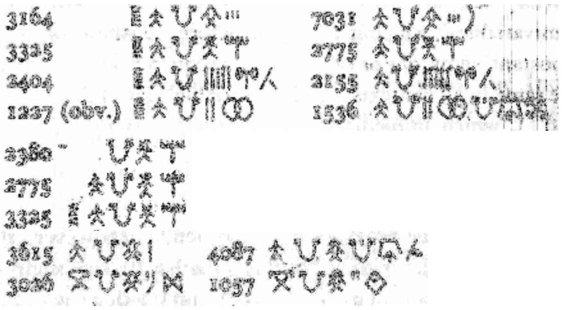
Last sign missing.

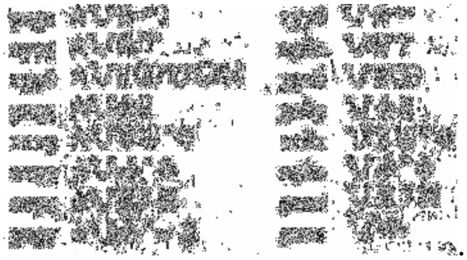


Jar sign dropped.



‘man’ sign types and equivalence.





With and without ‘man’ sign

Many pictorials in inscriptions in field symbols also occur in **pairs**: two tigers, two bisons, two heads of the unicorn.

The occurrence of pictorials and glyphs (signs) in pairs can be explained as an ‘alloyed’ version of the metal connoted rebus by the respective pictorial or glyph:

bagr.a (Sad.) = the condition of being mixed largely in different varieties; adj. used of grains, seeds, pulses, of which different varieties have been mixed in large or nearly equal proportions; bagr.a-o to be mixed, used of grains and also of men or animals of mixed blood (Mundari.lex.) bagr. adj. Mixed, impure; mix up; bagar. = mixed, not of one kind or quality, impure; untidy; bagar. caole = mixed rice (clean and not clean, or different kinds)(Santali); bagar. (H.)(Santali.lex.Bodding) baggad.a = sediment,

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

settlings, dregs as of oil, the mud or mire in a well, cow-dung mixed with water (Ka.); vagal.a refuse, dregs; van:gal.a bad, foul, nasty (M.)(Ka.lex.) ‘Doubling’ may be connoted by the lexeme, **barea** = two or, **‘bagad.o’** = the figure 2 (G.lex.) [**bagr.a, baggar.a, bagar.ao** = adj., used of grains, seeds, pulses, of which different varieties have been mixed in large or nearly equal proportions; condition of being mixed largely in different varieties; for a mixture in lesser proportion **boja** is used (Mundari.lex.) bagar., bagr.a = mixed, impure, confused; cf. bagar. (H.); bagar. is used mostly about rice, and bagr.a more about what is different in kind; bagr.i = adj. Mixed, impure; mix up, spoil by bringing foreign matters (Santali.lex.) Could the term, **bagr.a** have connoted an **alloyed ore** used for making the double-axe?] *bagad.avum* ‘to be adulterated’; *baga_d., baga_d.o* adulteration (G.)

ban:guri_ = a kind of hoe used for hoeing sugarcane (P.lex.)

The nature of an alloy can also be represented by using a homonym of **bagad.o**.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Rosetta stones

There are a few 'rosetta stones' of the writing system.

These 'rosetta stones' are seals found in Mesopotamian civilization area with glyphs which occur again on many epigraphs of the Sarasvati Civilization. Three such seals found in Mesopotamia are:

MS 4602 Indus Valley cylinder seal with a glyph of two seated monkeys and other motifs characteristically comparable to those in many epigraphs of the Civilization
Umma seal or Gadd Seal 1 square-shaped, with a cuneiform inscription and with a bison (short-horned bull) glyph
Seal Impression of a round seal found at Ur depicting a water-carrier with two stars
Ur cylinder seal BM 122947 containing early glyphs comparable to Signs 162 and 169

These 'rosetta stones' are two tin ingots found in a ship-wreck in Haifa, Israel containing glyphs which are comparable to those recorded on epigraphs of the civilization; Haifa was on a caravan-cum-shipping route from Sarasvati Civilization!

Sarasvati-Sindhu doab cylinder seal containing glyph of monkey

Sarasvati-Sindhu doab cylinder seal, ca. 3000 BCE depicting a palm tree and a man between two lions with wings and snakeheads, holding one arm around each, two long fish below, and one fish jumping after one lion's tail or the tail of a sitting monkey above it. MS 4602 (Manuscript in Metropolitan Museum of Art) Mehrgarh. Seal matrix on creamy stone or shell, Indus Valley, Pakistan, ca. 3000 BCE, 1 cylinder seal, diam. 2,0x3,7 cm, in fine execution influenced by the Jemdet Nasr style of Sumer.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Cylinder seal in Jemdet Nasr style of Sumer, shows two seated monkeys, in addition to typical glyphs of the Sarasvati Civilization. MS 4602

Apart from a seated monkey, the glyphs shown are:

three fishes, one of which is jumping up to the tail of one of the two tigers. [**hako** 'fish'; rebus: 'axe'; **a~s** = scales of fish (Santali); rebus: aya = iron (G.); **ayah**, **ayas** = metal (Skt.)]

A quiver with arrows, ligatured with two bows and other unidentifiable weapons within. (**sar, d.ol** = arrow); **bat.i** = a small brass bow; **khora** = a large brass bow; **d.ubha** = a metal bow (Santali) Rebus: **bat.i** = a metal cup or basin; **bat.hi** = a furnace for melting iron-ore (Santali)

Two tigers standing up with their heads turned backwards and being subdued by a standing person. (**kol** 'tiger'; rebus: 'metal'). **kaidau** = to subdue; rebus: **kaida** = a kind

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

of knife with a curved blade; a big thick sickle, used to pollard trees or to cut branches (Santali)

A sprout with five petals (taberna montana, ‘**tagara**’; rebus: **tagara** ‘tin’) in front of the legs of the standing person.

Since the context is clearly a reference to **kol** ‘metal’ (rebus: ‘tiger’), the cylinder seal depicts the metallic (bronze) weapons in possession of the seal owner.

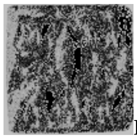
Molded faience figurine with a hole in centre. Three ligatured monkeys. This miniature carved faience bead or pin ornament is possibly placed on a stick or cord. Possibly molded and carved. Material: yellow brown glazed faience; 1.6 cm. high and 1.4 cm. dia; Mohenjodaro K 1053. Marshall 1931: pl. CLVIII.5; after Fig. 8.23, Kenoyer, 2000.

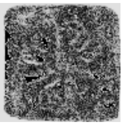
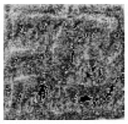
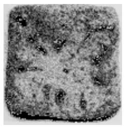
The ligaturing comparable to the ligature of three tigers on a tablet is an indication that the count of three is related to three objects made of copper (**tebr.a** ‘three’; **ta(m)bra** ‘copper’).

Glyph: **ga~r.i~** = a monkey; sakam ga~r.i~ a small species of monkey (Santali) Monkey **gad.ava** = male monkey (Ka.); gad.d.i, **gad.d.e_** (Go.); **kat.uvan**= (Ta.)(DEDR 1140) [Note a seal where a monkey is shown in lieu of a standard device in front of a one-horned bull]. **sakam ga~r.i**~ a small species of monkey (Santali)

Substantive: **kan.d.i** = furnace (Santali)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

A monkey is shown together with other animals on many seals: m440AC m0441Bt m1393t m1394t

   m1395At m1395Bt m0441At m0439t

[The motifs on m 439, m440 and m1393 to m1395 seem to be identical; on one side three or more tiger heads emanating from a body are shown; on another side a group of animals surrounding a horned lizard (gharial): two short-horned bulls facing each other, a rhinoceros, an elephant, a tiger looking back and a monkey (?) with face turned backwards.]

gadiau = to carry a sword, to be armed with a sword (Santali) **kar.c ib** = very excellent iron (Ko.) **kad.tale** (Tu.) long-edged sword

Glyph: *gad.i* markers or lines in a children's game; **enec gad.iko benaca** they make lines for the game (Santali)

*gad.i_* the groove of a pulley; a globule formed in fried cakes (G.) *ga_d.i_* a cart; *ga_d.um* a cart (G.) *gad.i* 'a wheel, a cart, a carriage, anything that runs on wheels'; *ra~t gad.i* 'a chariot'; *ghar. ghar.i* 'a pulley wheel'; *ghar.ghar.ao* 'to roll, as a ball; to revolve, as a wheel, or as a spindle; to whir'; *gharr.iko ghar.ghar.aoa* (Santali) *ghared.i_* a pulley; *gharad., gharod.* A cart-road; a wheel-rut (G.)

Glyph *gad., ga_n.t.h, gra_nth* a knot, an entanglement (G.)

Substantive: *ga_n.t.h* possession (G.)

Substantive: *gadi* a shop (Santali) *kat.ai* shop, bazaar, market (Ta.); *kat.a* market (Ma.)(DEDR 1142).

Substantive: *gar.* a fort. a palace; *gad.hi_* 'resident of a hill-fort'; *gad.i_* a companion, a servant (M.); a domestic servant, a labourer (G.) *gada gad, gad.a gud.* in crowds, numerous; *gadi* populous, as a village; *gadi t.an.d.i* the capital of T.an.d.i; *gadi sirampur* the capital of Serampore; *gad* crowd; *hor. gad* a crowd of people; *gad.i* lair of certain animals, as of a hare, pig (Santali) *gad.di_* a crowd (G.) *gad.o* an octroi; a duty levied at the gates of a town (used in Ka_t.hia_wa_d.). A residence of a zamindar, a fort is: *gad.hi_* the inhabitant of a hill-fort (G.) *gar., gar.h* (Santali) *ghar* 'house' (Hindi) *gharana* 'household' (Santali) *gad.h* a hill-fort; a hill; a mount (G.); *gad.ho* (Hem.Des.) *gad.hvi_* the governor of a fort (G.); *kat.t.at.am* building (Ta.); *ket.t.akam* house (Ma.);

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

kat. To build, manage (house) (Ka.); *kat.t.e* platform build under tree on village green (Ka.); *kat.t.ad.a* a building (Ka.); *kat.t.alme* building (Tu.); *kat.t.ad.amu* building (Te.); *ghat.t.a* quay, landing-place, bathing place (Skt.)(DEDR 1147).

Glyph: *gad.do* [Hem. Des. gud.da_liyam = Skt. pin.d.i_kr.tam formed into a ball] a beating with the fist (G.)
Glyph: *gad.i* a seed bed (Santali)

Bracelet **khar.ua_** = wrist ornament (H.); khad.u_ (Skt.); kha_ruwa_ = large iron ring (A.) kat.akam (Ta.)
kat.avu = cattle-path (Ta.)

kad.avu = turning lathe (Tu.) To throw kad. (kat.t.-) = to throw (Pa.); **kat.a_vu** = to drive in a nail (Ma.)

kat.avu = male of sheep or goat (Ta.)(DEDR 1123); Ram gar.era (Or.); xar. (Br.); ga_d.ar = sheep (G.) gad.ariya_= shepherd (H.) kad.ava = elk, Indian stag, *rusa aristotalis* (Ka.) *gad.d.ar* small sheep (G

kat.avai = leap, jump (Ta.) [Note the glyph of a jumping tiger].
kat.a = stride

Glyph: *gan.d.e* 'to place at a right angle to something else, cross, transverse'; *gan.d. gan.d.* 'across, at right angles, transversely' (Santali) [Note: A slanted line Lahn.d.a writing of accounts connotes a quarter; a straight line connotes 'one'.]

ka~t.a = a hook; **kat.a** = a pit saw (Santali.lex.) **kat.a kat.i** = cutting, to slash, kill; kat.ao = to cut (Santali.lex.); kat.aha = fierce, ravening; applied also to any cutting instrument used to kill an animal with; den, kat.aha odoktape, bring out your cutting instrument (to kill the goat with)(Santali.lex.) khat., khat. marte = with one blow, or with one cut; khat. menteye get topakkeda, he cut it right through with one blow; khar, khar marte = sharp[; to whish as when cutting with any sharp instrument (Santali.lex.) khad.u_ra = swing (AV 11.9.6) (Vedic.lex.)

gan.t.ave_t.a = batfowling, nightfowling wherein lights and lowbells are used; **gan.t.a** = bat (Te.lex.)

" Sign 99 **gan.t.u** = a notch, cut, indentation (Te.lex.) **granthi** = a joint or articulation of the body; a knot or prutuberance of any kind (Ka.lex.)
kan.t.a = a fork, grapnel (Santali.lex.)
kan.t.a = throat, tonsils (Santali.lex.); cf. kan.t.ha throat (Skt.lex.)
khar. = a herd, a flock; khar. ke khar. = in multitudes, flock after flock (Santali.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

gan.t.e = a spoon; a ladle (Te.lex.)

Glyph: *gan.d.a* ‘a set of four’; *gan.d.a gut.i* to divide, to make up an account (Santali) *gan.d.i* hole, orifice (Te.); *kan.d.i*, *gan.d.i* opening, hole, window (Tu.)(DEDR 1176).

kad.uve = hero (Ka.)
Substantive: *gan.d.a* male person; gan.d.iga a valliant man (Ka.)(DEDR 1173).
Substantive: *kan.t.am* iron style for writing on palmyra leaves (Ta.); *gan.t.amu* id. (Te.)(DEDR 1170)

gan.t.a = a stub, the stump of a corn-stalk; gan.t.e = the cereal *holcus picatus*; pl. gan.t.elu = id., also called sajjalu in southern Telugu districts (Te.lex.)

Alternative:
Small monkey ko_d.a (Ir.), ko_d.ag = monkey (Ir.) **ko_t.aram** (Ta.), korg = black monkey (Ko.)

god.d.ali = axe (Te.)

kuran:ku = monkey (Ta.lex.) [On a seal, a monkey is shown in lieu of the standard device; this may be a rebus for an anvil, **kuraga**].

ku_r-ige a seed-drill, sowing machine drawn by oxen (Ka.cf. **MIAI**, p.29. **kurgi** is a distance that may be ploughed and sown in one day, with a pair of bullocks and drill plough (M.). **ku_ru** to fill or stuff anything, to load (Te.); **ku_r-ige hod.e** to work with the ku_r-ige (Ka.lex.)

korn:ga a Hindu caste of wood turners (Santali.lex.)

kuraga = an instrument of goldsmiths; a sort of anvil (Ka.); khura_rya_ (M)(Ka.lex.) kura = ploughshare (L.); kurelna_ to poke (P.); to dig (H.); kuredna_ to scrape (H.)(CDIAL 3319). [**kora-mut.t.u** = tool, instrument (Ka.)]

Decoding of cuneiform in Gadd Seal 1 using lexemes from the substrate language

It is possible that the early lexeme for cassiterite or tin ore was '**kasa**'.

“aurichalcum…In the poetic phase, which loves the vague, this ‘mountain-copper’ was a mythic natural metal, ranking between gold and silver…Plato (the ‘Critias’ ix, treating of Atlantis, America) makes oreichalc, ‘now known only by name,’ the most precious metal after gold. Pliny (xxxiv.2) tells us truly enough that aurichalcum no longer exists…Festus speaks of ‘orichalcum (copper), stannum (zinc or pewter?), cassiterum (tin), and aurichalcum (brass).’..When Dioscorides (v.cap.84) seems to allude to artificial or furnace-calamine, an impure oxide of zinc, he may mean the more modern tutiya (Avicenna), toutia, thouthia, cadmie des fourneaux, or tutty. Reduced to powder, and mixed with an equal quantity of wetted charcoal by way of

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

fondant or flux, it is melted with copper to form brass…aurichalcum was made synonymous with electrum, natural or artificial…Brugsch (i.345) understands by '**usem**' brass, and thinks asmara or asmala equivalent to the Hebrew hasmal or hashmal = electrum. In Bunsen (v.757) **Kasabet** and **kakhi** are brass (aurichalcum), and **Khesbet** is a metal connected with **Kassiteros** = tin…Herodotus (iii.115), in the historic age (BCE 480-30), gives the name of the mythical metal to the 'tears of the Heliades,' which the Latins called succinum (succum), the Low-Latins ambrum, the Arabs anbar, and we Amber…The staters of Lydian Croesus, held by the Greeks to be the most ancient of coins, were, according to Bockh, of electrum, three parts gold and one part silver…" (Richard F. Burton, 1884, *The book of the sword* (repr. 1987), New York, Dover Publications, pp. 85-87).

Umma seal or Gadd Seal 1

If the cuneiform reading of this seal is: sak kasi, the lexemes may connote: **sak** 'shell or conch' and **kasi** 'cassiterite'. The bull may be read as: d.han:gar 'smith'. Thus the message of the seal is the possession of the smith or the commodities traded by the smith: shell and copper.

Gadd Seal 1 Seal impression and reverse of seal from Ur (U.7683; BM 120573); image of bison and cuneiform inscription; cf. Mitchell 1986: 280-1 no.7 and fig. 111; Parpola, 1994, p. 131: signs may be read as (1) *sag(k)* or *ka*, (2) *ku* or *lu* or *ma*, and (3) z*i* or *ba (4)?*. The commonest value: *sag-ku-zi* Or, SAG.KU(?).IGI.X or SAG.KU(?)P[AD]?

On the problem of the Indus (Sarasvati-Sindhu) Script, it is important to refer to one message on a sealing from Umma, since no bilingual script messages have so far been found: "...an imprint of (Indus (Sarasvati-Sindhu)) seal upon the fragment of a clay label from a bale of cloth had also been published by Father Scheil (*Revue d'Assyriologie*, Vol. 22: 56), and this was said to come from the site of Umma, the neighbor city of Lagash...No.1. First among the seals discovered at Ur (in 1923) is the unique object ...in the British Museum...On the face stands, below, the figure of a bull with head bent down...the inscription...is in archaic cuneiform writing...of a period before 2500 BCE There are three signs and very probably traces of a fourth, almost obliterated; the three preserved are themselves scratchy and rather worn, though not ill-formed. Hence their reading is doubtful--the choices are, for the first SAG(K) or KA, for the second KU or possibly LU, while the third is almost certainly S'I, and the fourth, it existed at all, is quite uncertain...using the commonest values of the signs, sak-ku-s'i--(with possible loss of something at the end) may be pronounced the best provisional reading...It does not, at least, seem to be any Sumerian or Akkadian name...(the seal is) probably, a product of some place under the influence both of Indus (Sarasvati-Sindhu) and of the Sumerian civilizations." (Gadd, 1932, pp.3-32.)

The seal is a 'rosetta stone' available to provide a lead to decode the epigraphs of Sarasvati Civilization. It is a 'rosetta stone' because it contains a message written in a known script: the cuneiform. Assuming that the inscription in cuneiform on this seal is

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

a transliteration of morphemes of the language of the civilization, an attempt may be made to relate the messages in terms of the general pattern of the use of pictorial motifs to convey weapons and tools.

The possible rebus lexemes conveyes by **sak lu**… are: **sak** = conch shell; **luhia, luiha** = an iron vessel or pot used for cooking and other purposes; loha luti = iron utensils and implements (Santali) The bull is **d.han:gar**; rebus: blacksmith.

Entries from the *Indian Lexicon*: *sag, zag* 'a conical form; the teat'; the dug of a beast (G.) *sagan* 'an iron nail fixed in the pole of a plough for fastening the yoke' (G.) kus' a ploughshare (Skt.), *kos'* 'an iron bar sharpened at one end, used as an instrument for digging' (G.) *kus* 'a hand-held implement for turning up of clods--a pole with an iron blade or a head: also the iron member of this implement' (M.)[32]

Reading: **sag ka-si-ta**

Rebus: **saga** denoting pha_tries or clans in Gond.; *kase_ra_* metal worker (L.); kasera_ worker in pewter (P.Bi.H.); kasero maker of brass pots (N.);

Alternative: **kusi_da** = usurer. *kasat.iyo* a pawnbroker, a money-lender (G.)

kus. to test, examine; to shine (Skt.lex.) kusumbha, kusumbham gold (Skt.lex.) kah, dat. kus^{u} testing gold on a touchstone (K.)(CDIAL 2970). ko_cikam Sa_ma ve_da (Cu_t.a_.)(Ta.lex.) Gold: ku_r..ai gold (Ta.); cf. kus' (Skt.)(Ta.lex.) kr.s'a_nu burning, tormenting (Rudra_, Agni_); kr.s'a_nu guarding of the Soma, name of an archer who guards the soma from gods and men (kr.s'a_nurasta_ etanna_makah- so_mapa_lah- : RV. iv.27.3) (Vedic. lex.) cf. the interpretation of soma as electrum, gold-siver ore, op cit. kr.s'anam gold; form, shape; a pearl; kus'a wrought iron (Skt.lex.) kr.s'ana pearl (RV. x.68.11); kr.s'anvant decorated with pearls (RV. i.126.); kr.s'anin id. (RV. vii.18.23)(Vedic.lex.) cf. ka_cam gold; ka_cu gold; ka_can-am gold (Ta.lex.) ko_s'am gold or silver wrought or unwrought; treasure, money, wealth (Skt.lex.) Money-lender: kucchar. miserly (WPah.)(CDIAL 3420). kusi_dika, kusi_din a usurer; kus.i_da usury; kusita one who lives on usury (Skt.lex.) kahu_ mean, miserly (K.)(CDIAL 3441). **kusi_da** usury, a usurer (Skt.Ka.); kusi_daka a usurer (Skt.Ka.); a money-lender (Ka.lex.) kaca-vaci niggard; kaya-vaci id. (Ta.lex.) kus'i_dam. usury; kusi_dam. any loan or thing lent to be repaid with interest; lending money, usury, the profession of usury; kusi_daka, kusi_din a usurer kusi_dah. (also written as kus'i_-s.i_-da) a money-lender, usurer; kusi_da-pathah. usury, usurious interest; any interest exceeding 5 percent; kusi_da-vr.ddhih. interest on money; kusi_da_ the wife of usurer; kusi_da_yi_ id. (Skt.lex.) Usury: kausi_da connected with a loan; usurious; kausa_dhyam the practice of usury (Skt.lex.) cf. kucar < khusr (U.) anything obtained from shopkeeper as a bargain (Ta.lex.) kusita_yi_ a kind of demoness (Maitra_yan.i Sam.hita_. iii.2.6);

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

kusida_yi_ wife of a money-lender (Ka_t.haka Sam.hita_. x.5)(Vedic.lex.) r.s.i: kusi_di_ ka_n.va is the r.s.i of su_kta RV 8.81 to 8.83

armu = ibex, mountaingoat (W. Muss-Arnolt, *A concise dictionary of the Assyrian language*, Berlin, Reuther and Reichard, 1905).

ka_cam blue vitrol (Ta.lex.) ka_si_sa green vitriol (Sus'r.); ka_s'i_s'a (Skt.); kasis green sulphate of iron, copperas (N.); ka_si_sa (Or.); kasi_s blue or green vitriol (H.); ka_hi_ (H.); hira_-kas, hira_-kas'i_ green vitriol, copperas (M.); kahijan.u to become coated with verdigris (S.)(CDIAL 3140).

kacai-mur-ukki goldsmith's pincers; cf. kaca + ; kacai-val.aiyal bracelets made of braided gold wire; kacai-ve_lai braiding with gold wire (W.); kacai-vaitta-put.avai gold-fringed cloth (W.); kacitam < khacita setting, mounting with precious stones,inlaying (Ta.)(Ta.lex.)

ka_sai, ka_sye a kind of tortoise (the bigger kind) (Kon.lex.) kaccakad.i a tortoise shell (Tu.lex.) kaccam tortoise (kat.alpu-k-kur..i-k-kaccama_ki) (Kampara_. Kat.ar-a_vu. 42)(Ta.lex.) kacchapa turtle, tortoise (MBh. Pali); kacchava, kacchavi_ (Pkt.); kochuw^u (K.); kacha~u~, kachu~_ (S.); kacchu_, kacchu_-kumma~_ [< ku_rma- (P.); kachuwa_ (N.); ka_cha (A.); ka_chim (B.); kechu, kecho, ke~chu, kai_cha, kai~_ca, kachima, kacima (Or.); ka_ch^i (Mth.); kachua_ (Bhoj.Aw.H.); kachwa_ (H.); kacch, kach (H.); ka_sav, ka~_sav (M.); ka_savu (Konkan.i); kacchabha (Pkt.); kasumbu, kasubu (Si.); ka_cbo (G.)(CDIAL 2619). kaccapam, kaccan-, kaccam turtle, tortoise; kat.alpu-k-kur..i-k-kaccama_ki (Kampara_.Katar-a_vu.42) (Ta.lex.) ?kavve tortoise (Kol.Nk.Ga.); kavva (Pa.); gavva cowrie (Te.)(DEDR 1342).

kacce, kacci the organ of generation (yo_ni) of cows and buffaloes (Ka.M.Te.); kari (Te.)(Ka.lex.) kuci, kucu membrum virile, as small (Ta.lex.) <u>Pubic hair</u>: kuco pubic hair (S.); kuciro one who lets the pubic hair grow (S.)(CDIAL 3408). kucci penis (Ma.); kuci membrum virile; kucu membrum virile (Ta.); kun.n.e genitals (Ka.); kua genitals (Tu.)(DEDR 1639).

kaccam a very small kind of fish; kaccar--karuva_t.u kaccal fish salted and dried; kacca-c-celvam bone of the kaccam fish (Ta.lex.) ka_ca_mpa_rai a kind of fish; kayar--ken.t.ai a kind of ken.t.ai fish (W.)(Ta.lex)

<u>Girdle, girth; loincloth</u>: kaccai girdle, belt; (ma_cun.a-k-kaccaipa_t.i : Tiruva_ca. 9,19); whole piece of new cloth; kacikai garment, cloth; curtain; ka_ci woman's waist girdle consisting of seven strings of beads or bells; (ka_ci-y-er..u ko_vai : Cilap. 4,30, Urai); ka_cu girdle strung with gems; (pat.t.ut.ai cu_r..nta ka_cu : Ci_vaka. 468)(Ta.lex.) ka_ci_ girdle (Skt.); kam.ci_ (Pkt.); ka_ci tinkling girdle (Or.); ka~_ca a kind of loose

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

pantaloons (S.)(CDIAL 3015). kaks.ya_ girdle, girth (RV.); kaks.ya pertaining to a girdle, girdled (?)(RV.); kaks.a_ girdle (MBh.); loincloth (Skt.); kaks.a girdle (MBh.); end of lower garment, hem (Skt.); kaccha_ belt, loin- or waist-cloth (Pali); ka_kha_ strings by which a load is tied to the back (Ku.); kakkha_, kaccha_, kaccha loincloth (Pkt.); ka_ch cloth worn between the legs, edge, hem (N.); loincloth (H.); tuck in a dhoti, loincloth (G.); ka_ch, ka_c hem of loincloth tucked in between the legs (B.); ka_cha a small cloth (Or.); ka_cha_ loincloth (Or.H.); small tight loincloth (Bi.) kacha_ end of garment tucked in (Or.); ka_chni_ a cloth worn over the loincloth (H.); kachan[i] a small loincloth (Mth.); ka_cho tuck in a dhoti, loincloth (G.); ka_chr.o tuck in a sari (G.); ka_s, ka~_s tuck in a dhoti (M.); ka~_cya_ fold of dhoti, girdle (M. <H.); kasa-pat.a fold in a body cloth (Si.)(CDIAL 2592). Girdle: kaccu belt, girdle, sash, cummerband; mal.l.ar...ya_tta pu_n:kaccu (Ci_vaka. 16); broad tape bad; ta_r..kaccir-pin.ippun.t.u (Ci_vaka. 1748)(Ta.lex.) kaccam the end piece of the Hindu garment tucked up in folds at the waist, such fold brought up from the front and tucked up behind (Ta.lex.) kaccam elephant's neck-rope; stirrup (Ta.lex.) kaccai rope, girth, girdle, belt, piece of new cloth (Ta.); kacca girdle, waist-belt, long cloth (Ma.); end of the lower garment passed between the legs and tucked in behind (Te.); kaccad.amu cod-piece (Te.); kacv perineal cloth (Ko.); koc embroidered perineal cloth (To.); cloth given at funeral (To.); kacce cloth passed between the legs to cover the privities, girdle (Ka.); perineal cloth (Kod..); end of lower garment gathered up behind and tucked into waistband (Tu.)(DEDR App.20). Loincloth: kacevo_k, koco_k coat, mantle; kuchok bag (Wg.)(CDIAL 2594). kaccanti gunny bag; kaccanti-y-avir.. to spin a yarn, lit., to untie the bag (Ta.lex.) kacchat.t.i_, kacchut.t.iya_, kaccho_t.i_ loincloth (Pkt.); kachvat.t.i_ gusset (L.); kachot.a_ loincloth (P.); kast.a_, ka_sut.i (A.); ka_chat.a_ (Or.); kachaut.i_ (H.); kachot.o, kachot.i_ (G.); kasot.a_ tuck or end of dhoti (M.)(CDIAL 2590). kaccat.t.am < kacchat.ika_ folds in the garment of a Hindu; strip of cloth worn over a man's private parts; kaccam the end piece of the Hindu garment tucked up in folds at the waist, such fold brought up from the front and tucked up behind (Ta.lex.) kucavam < koycakam folds of cloth put on by Indian women (G.Tj.D. 63)(Ta.lex.) (kaccatu kat.intu : Kalla_. 44); gajji corset (Kur.); kacuka corselet, jacket (R.); bodice, armour (Pali); snake's slough (Skt.); kam.cu woman's bodice (Pkt.); kam.cua bodice, armour (Pkt.); ka~_jo band of metal round of a khukri (N.); ka~_cu_, ka~cuwa_ bodice, shirt (H.); ka~_c.va_ a sort of waistcoat (M.)(CDIAL 2626). kaja_k the waist-band or sash worn by peons or sepoys (Ka.H.)(Ka.lex.) kaculi_ bodice (Skt.); kam.culi (NiDoc.); kam.culia_ (Pkt.); kajuro (S.); kajli_ (L.); ka~_culi_ clothes (Ku.); bodice, sheath (H.); ka~_suli woman's bodice (A.); ka~_culi (B.); kacul.a (Or.); ka~_cali (OMth.); ka~_cl.i_ bodice (G.); ka~_c.ol.i_, ka_c.ol.i_ bodice (M.)(CDIAL 2627)[with o from col.i_ < co_d.a jacket (Skt.)(CDIAL 4923). Tunic, jacket: kacukan- one who wears a tunic or jacket; kacuki, ka_cukan, ka_cuki the body-guard of a king, wearing a jacket; jacket; curtain; ka_cukam jacket; ka_cuki id. (Ta.lex.) Dress, costume: ka_ca dress, costume, character (B.); kicca to be done; duty (Pali) to be done; action (Pkt.)(CDIAL 3428). Cloth merchant: kaccavat.a-k-ka_ran- merchant, trader;

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

kaccavat.am (Ta.); kaccavat.am (Ma.) peddling, trade especially in cloth; mixing up of things (Ta.lex.) kaks.apat.t.a loincloth (Skt.); kacchat.t.i_, kacchut.t.iya_, kaccho_t.i_ loincloth (Pkt.); kachvat.t.ti_ gusset (L.); kahot.a_ loincloth (P.); kast.a_, ka_sut.i (A.); ka_chat.a_, ka_chot.i (Or.); kachaut.i_ (H.); kachot.o (G.); kachot.i_ (G.); kasot.a_ tuck or end of dhoti (M.)(CDIAL 2590). [cf. koch curve above hip where babies are carried (K.); ka_kh lap (N.); ka_s loins, waist, udder (M.); kaks.a armpit (RV.)(CDIAL 2588). kar.ma_ waist (Kur.); kar.me id. (Malt.)(DEDR 1143).] kacca-vat.akka_ran- merchant, trader; kaccavat.am peddling, trade especially in cloth (J.); id. (Ma.); mixing up of things (Ta.)(Ta.lex.) Clothing:{Two types of clothing are related to parts of the body: kaccai girdle worn around the lap or hip and tied; and kaccu bodice taken around the armpits and breasts and tied.} > Stream 1: Armpit, hip, lap, side of the body below the armpit: kaca~_t near; kacant-kow armpit (Wg.)(CDIAL 2593). kachur.i flank below armpit (S.)(CDIAL 2591). Groin: keccal the udder of beasts (Ka.lex.) ked belly from navel to groin (Ko.); ke0 lower belly (of man)(To.); gejje the groin between the belly and the thigh (Ka.); gajja id. (Te.)(DEDR 1938). kaks.a armpit (RV.); groin ? (AV.); kaks.a_ armpit (Sus'r.); kaccha id. (Pali); kakkha, kaccha (Pkt.); kakh, kak (Gy.); xac.em my armpit (Pas'.); koch curve above the hip where babies are carried (K.); ka_kh lap (N.); side of the body, armpit (Ku.); ka_khi side of the body below the armpit, armpit (N.); ka_ch side, edge (N.); ka_x side of the body, edge (A.); ka~_kh flank, hip, waist; armpit (B.); side, armpit (Mth.Bhoj.H.); ka_kh id. (G.); ka_s loins, waist, udder (M.); ka_kha side, armpit (Or.); kach armpit (K.); kach, kachu (S.); kacho side of a boat (S.); kakchli_ id. (WPah.); kaccha_ id. (P.); kacch armpit (L.P.); ka~_kh armpit (M.); kha_kko (Konkan.i); kasa armpit (Si.); kac.-kuru_ armpit (Kt.); kacant-ko_u (Wg.); kus.lok (Pr.); kacya_l (Gaw.); kac.a_l (Bshk.); kas.a_l (Tor.); ka_xe by the side of (A.); kakhu to, for (OB.); kaha~_ beside, near (N.)(CDIAL 2588). kamukkat.t.u armpit (Ta.); ganjguy, ganjgu.l.y armpit (Ko.); komkwir. (To.); kavun:kur, kan:kur, kan:kar.., kan:kur..a, kon:kur.. id. (Ka.); gan:kelu id. (Ka.); kavnki vital spot (Kod..); kan:kkul.a armpit (Tu.); karkiled.i (Kor.); kaun:gili breast, bosom; an embrace; kaun:gilincu to embrace, hug, press to the bosom (Te.); kavkor, kavkod. armpit (Pa.); kavngil, kangil lap (Pa.); kalgil id. (Ga.); ka_kri_, kakri armpit (Go.)(DEDR 1234). kidukilu armpit (Tu.); kitki lomber.i, ki_ti kola id.; ki_ti tickling (Kui); kitkorod.i armpit (Kui); kutli_ id. (Go.); gutu id. (Kur.); kusul id. (Ga.)(DEDR 1551). akkul., can:kam armpit; akkul.u to tickle (Ta.); akkul.am armpit, tickling (Ma.); cakkili armpit (Te.); can:ka, can:kili id. (Te.); sanka_, sanka, sakka id. (Kol.); sakka id. (Nk.); canka id. (Ga.); ceql kund.e to tickle (Malt.)(DEDR 2274). tokku armpit (Ma.); tol^{o}kh side of the body, flank (Kur.); tolokh armpit (Kur.)(DEDR 3520). Breast, udder, teat: a~_car breast (Aw.); a~_cal. udder, teat (G.); a~_cu_l. udder (M.)(CDIAL 168). ca_ci mother's milk (Ta.) a childish word for the female breast (Ka.); woman's breast (Te.)(DEDR 2436). > Stream 1: kaccu a kind of corset worn by Indian women in ancient times (Ta.); bodice to confine the breast (Ma.) < ? kacuka (Skt.)(DEDR 1098). kaccu > Stream 2: kaks.ya girdle, girth (RV.); kaks.a_ girdle (MBh.); loincloth (Skt.); kaccha_ belt, loin- or waist-cloth (Pali); loincloth (Pkt.); ka_kha_ strings by which a load is tied to the

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

back (Ku.); ka_ch cloth worn between the legs, edge, hem (N.B.); tuck in a dhoti,loincloth (G.); ka_c hem of loincloth tucked in between the legs (B.); ka_cha a small cloth (Or.); loincloth (H.); ka_cha_ loincloth (Or.H.); kacha_ end of garment tucked in (Or.); small tight loincloth (Bi.); kachan^{i} a small loincloth (Mth.); ka_cho tuck in a dhoti, loincloth (G.); ka_chr.o tuck in a sari (G.); ka_, ka~_s tuck in a dhoti (M.); ka~_cya_ fold of dhoti, girdle (M. < LM); kasa-pat.a fold in a body cloth (Si.); kaci near (Dardic <?kaks.ye_); kas, kac, gasi~_ beside, with, by (Dardic)(CDIAL 2592). khesiyu~ a cloth loosely worn over the shoulders (G.); khe~s a partic. kind of cloth (cotton, wool,or silk)(M.); kes' silk, silk threads (Gy.); khes' a kind of silk cloth worn by women as a girdle (K.); a woollen wrapper (B.); khesr.a_ a figured cloth (H.); khesu thick cotton cloth (S.); khes thick cotton shawl with coloured border (L.); a particular kind of cloth made in Bhadgaon (N.); a figured cloth (H.); a cloth loosely worn over the shoulderss (G.); a kind of cloth (P.); khesi_ small shawl (P.)(CDIAL 3924). cf. kayal string (Ma.); kayir-u rope, cord, string (Ta.)(DEDR 1254).

kajam yard-measure (Ta. < gaz (U.); kasi_, kasai_, kesai_ rope used in land measurement (H.)(CDIAL 2965).

kaca, kasa, kasara, gaji, kacapici the sound of mixing miscellaneous boiled things (as rice, vegetables, etc.) with the hand: confusion; kacapici kalasu to mingle boiled things in a confused manner; kacapicakelasa confused work (Ka.lex.) kaca kaca a sound produced as when kneading any glutinous substance (Tu.lex.) kujalam sour gruel (Skt.lex.) <u>To mix; rice and lentils</u>: kacapu a dish of boiled vegetables or fruits seasoned with salt, pepper, etc. (Ka.); kajapu, kajipu (Tu.); katipaya several, some (Ka.)(Ka.lex.) ginjna_ to mix (Kur.); ginjye id.; ginjgro mixed (as food)(Malt.)(DEDR 1522). kiccad.i a kind of vegetable dish; kaccari a kind of sauce (Ka.lex.)

ka_cam < ka_ca crystal; ka_calavan.am salt of potash or soda in crystalline state, one of pan~ca-lavan.am; ka_cu gem, crystal bead (Ir-ai. 2, Urai. Pak. 29)(Ta.)(Ta.lex.)

keccu (the marrow, essence, or pith of plants etc.); core, the heart of a tree; essence, strength (majjan, sa_ra); marada-keccu id.; keccu-kat.t.u to become strong, firm, or excessive; kecco_r..ad.ike pieces of areca nut that are hard (Ka.lex.) kirci slippery mud (Ka.)

kas kasa = bronze, bell-metal (Santali) ka_msum = bell-metal; any amalgam of zinc and copper; :Skt. ka_msya (G.); ka_msa_m, ka_msi_ = large cymbals made of bell-metal (G.) kamsa_r, kanasa_ro, kan.asa_ro (cf. ka_msum fr. Skt. ka_msya = bell-metal + ka_r ‘worker fr. kr. ‘to do’) a copper-smith (G.) kasis = sulphate of iron (Santali) ka~c = glass; kaca, khanca, khaca = a pice, ¼ of anna (Santali) ka_cu = gold, gold coin, money, a small copper coin (Ta.); ka_s’u = gold, money, the smallest copper coin (Ma.); ka.c = rupee (Ko.); kos. id. (To.); ka_su = the smallest copper coin, a cash, coin

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

or money in general (Ka.); ka_su an old copper coin worth half a pie, a cash (Tu.); ka_su = a cash, a coin in general, a gold coin, money (Te.); pice (Go.); Skt. kars.a (DEDR 1431). ka_n~canam = gold (Skt.) ka_ji a glass bangle (Tu.lex.) ka_ju (Tadbhava of ka_ca) glass; ga_ju glass; ga_ju-dod.ige a glass-ornament (Ka.lex.) ka_ch glass (so termed in poetry); kachch glass (P.lex.) ga_ju glass (Te.lex.)

kacam hair on the head (Ta.lex.) kaca the hair of the head (Ka.Skt.); matted and twisted hair; a bundle of hair at the back of the head; a binding, band; the hem of a garment; kaca-paks.a a quantity of hair; much hair; thick or ornamented hair; kacapa_s'a = kacabhara a quantity of hair etc. (Ka.); kacabandha a braid of hair (Ka.)(Ka.lex.) For semant. 'hem' cf. kaks.a, kacca, kacce the hem of a garment tucked into the waist-band (Ka.Skt.); kacce (Tadbhava of kaks.e) id.; a female's cloth; a girdle (Ka.); kaccai (Ta.); kaccha the hem or end of a garment tucked into the waist-band; the tuck of a do_tra etc.; ka_ca_, ka_si a cloth used as girdling for the loins (Ka.); ka_cya_ (M.H.); ka_s'a_karpat.a = ka_sigappad.a, ka_sikacad.i, ka_sigappad.a a rag used to cover the privities or to gird the loins (Ka.); ka_s'e, ka_ca_, ka_si, ka_se (Tadbhava of ka_s'a_) a cloth used to cover the privities or to gird the loins (Ka.); the end of a woman's garment tucked into the waist-band (Ka.); ka_cya_ (M.)(Ka.lex.)

kaca-put.am < gaja + calcining medicine with the fire prepared from burning 100 cakes of cow-dung (Mu_. A.)(Ta.lex.) cf. kacaga_r-ike the business of a brazier, a worker in bell-metal, a coppersmith; kacaga_rti a woman of the brazier caste; kaciga name among Telugu bra_hman.as and s'u_dras (Ka.); kacuga_r-a, kacaga_r-a brazier; vyo_ka_ra, lo_haka_ra (Ka.lex.) Still: kacchapa a flat kind of still (Ka.lex.) A treasure of Kube_ra: kacchapa an apparatus used in the distillation of spirituous liquor; one of the nine treasures of Kube_ra (Skt.lex.) To rub, scrape, assay: kasan assaying (H.); kasn.i_ test by rubbing, distress (G.); kas.an.a rubbing, testing (Skt.)(CDIAL 2971). kas.ati rubs on a touchstone (Pa_n..com.); scratches (ChUp.); kas. hurts (Skt.); kasai rubs (Pkt.); ks.e to scrape, rub (Kt.); kas.a_ to whittle, lick (Wg.); kos.o to scratch (?Pr.); ka_z. to smear, wipe (Pas'.); khos.ik to groom a horse (Kho.); kaha_iba to apply a mordant substance (A.); kasiba_ to rub, scrape, scratch, labour hard (Or. semant. cf. gahan.u)(CDIAL 2972). Touchstone: kas.a rubbing (Skt.); touchstone (Pa_n..com.); kasa striking; rubbing on a touchstone (Pkt.); touchstone (Or.); kahu wearying (K.); kahu tinder (L.); kasi touchstone (N.OMarw.OG.); kah a mordant substance (A.); kas touchstone (B.P.); assay, test (H.); quality of gold or silver as determined by rubbing on a touchstone (M.); kasaya touchstone (Si.)(CDIAL 2970). kasapat.t.a, kasavat.t.a touchstone (Pkt.); kas.apat.t.ika_ touchstone (Skt.)[perh. hyper-sanskritism]; kahwut.^{u} (K.); kasaut.i_ (Ku.); kasat.i (B.); kaxat.i (A.); kasot.i (Or.); kasaut.i_ (Bi.OAw.H.P.); kasawat.i_ (Bhoj.); kasot.i_ (S.); kasvat.i_ (S.M.); kasaut.au (OG.); kasot.i_ (G.M.); kasvat. (M.)(CDIAL 2973). Friction, trituration, abrasion: ghars.a friction (R.); gharisa, ghamsa, gha_sa id. (Pkt.); gos. dough (Kho.)[cf.a_raz.el to knead (Psht.)]; gah, g^{a}h trituration (K.); ghaso rub, scrape (S.); ghe~s a touch, a rub (B.); ghas abrasion (L.);

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

ghassa_ loss (L.); rubbing (esp.in copulation)(P.); gha_s wear and tear (G.); gha_sa_-gha_s reiterated rubbing (M.)(CDIAL 4448). Miller: ghat.ero, ghat.t.ero miller (N.)(CDIAL 4452). ghars.an.a rubbing (Sus'r.); gharisan.a-, gharasan.a-, gham.san.a rubbing (Pkt.); gahana beating (Si.)(CDIAL 4449). Grindstone, mill: ghars.t.a grindstone, mill (Skt.); gharat.t.a grindstone (Skt.); gharat.t.aka, gharat.t.ika_ grindstone (Skt.MIA.< ghar^{a}s.t.ra or ghrat.t.hra- (Skt.) ghurat. handmill (L.)(CDIAL 4488). To pound; rub, polish, wear away: ghr.s.t.a rubbed, pounded (Sus'r.); frayed, sore (MBh.); ghat.t.ha, ghit.t.ha rubbed (Pkt.); gat.ho rubbed (S. with a for i after pres. st. gasan. < ghars.ati); ghat.t.ha_ hard place on palm by attrition (P.); gha_t.ha_ blister (P. ?<H.)(CDIAL 4510). xarbna_ to give an extra pounding of rice, for cleaning it from grains unhusked or spoiled (Kur.); qarwe to clean rice by pounding; qarwre to be bruised or hurt by falling (Malt.)(DEDR 1295). ghr.s.t.i rubbing, pounding (Skt.); ga_t.hi an excoriation (a_?)(S.)(CDIAL 4511). ghars.ati rubs (Sus'r.); ghr.s.yate_ is rubbed (Skt.); gham.sati rubs, grinds (Pali); gha_sai rubs (Pkt.); gas., gas to rub, rub in (Dardic); ghasun. to rub (L.); gha_sta_ polishes (Konkan.i); gasanava_, gahanava_ to beat, strike (Si.); ghasai rubs, polishes (Pkt.); gaz.oiki to grind (on flat stone with another stone)(Sh.); g^{a}hun to grind, polish (K.); gahan.u to rub, grind by rubbing (S.); ghaun.a_ to grind, rub (P.); ghau~h rubbing (P.); ghi_h rubbing the body (P.); ghasnu to rub on (N.); gha~hiba to rub, grind (A.); ghi~sa_ to rub against (B.); ghasa_ to rub (B.); ghasiba_ to rub, massage (Or.); ghisna_, ghasna_to rub (H.); ghasvu~ to rub, polish (G.); gasan.u to be abraded, to fret (S.); ghassan., ghassun. to be rubbed, wear away (L.); ghasn.a_ id. (P.); ghisinu id. (N.); ghisna_ to be rubbed (H.); gha_vu~ to wear away (G.); gha_sn.e~ id. (M.)(CDIAL 4450). ghars.a friction (R.); gharisa, gham.sa, gha_sa (Pkt.); gah, g^{a}h trituration (K.); ghas'o rub, scrape (S.); ghas abrasion (L.); ghassa_ loss (L.); rubbing (esp. in copulation)(P.); ghe~s a touch, rub (B.); gha_s wear and tear (G.); gha_sa_-gha_s reiterated rubbing (M.)(CDIAL 4448). ghat.t.ayati rubs, touches, shakes (Sus'r.); ghat.t.ate_ (Dha_tup.); ghat.t.ita (MBh.); ghat.t.ai touches, rubs against (Pkt.); ghot.o to rub with a pestle (S.); gho_t.un. to rub (L.); ghot.n.a_ to grind, rub, smoothe; ghot.t.a_ a paper-polishing instrument (P.); ghot.nu to rub, polish, wear away (N.); gho~t.a_, ghu~t.a_ to rub (B.); ghot.na_, gho~t.na_ to rub (H.); gho~t.n.e~ to grind, rub, polish (G.)(CDIAL 4417). To rub; to pulverize: xo_sna_ (xu_syas) to pulverize by pounding with a heavy instrument which beats vertically, harass (Kur.); qose to pound, smash (Malt.); xo_shking, xo_shing to rub (Br.); tene xo_shking to consort with, interfere with (Br.)(DEDR 2189). sok to pound grain; chakachun, khijau to pulverise (Santali.lex.) Rubs; grinds: gos. dough (Kho.); a_gazel to knead (Psht.); gah, g^{a}h trituration (K.); ghas'o rub, scrape (S.); ghas abrasion; ghassa_ loss (L.); rubbing (esp. in copulation)(P.); ghe~s a touch, rub (B.); gha_s wear and tear (G.); gha_sa_-gha_s reiterated rubbing (M.)(CDIAL 4448). cf. ghars.an.a rubbing (Sus'r.); rubs oneself (MBh.); ghr.s.yate_ is rubbed (Skt.); gham.sati rubs, grinds (Pali); gham.siya, gha_sai rubs (Pkt.); gas. (Dm.); gas' to rub, rub in (Wot..); ghas' to clasp, bite (Phal.); ghasun. to rub (L.); ghasa_ (B.); ghasna_ (H.); gha_svu~ (G.); gha_sn.e~, gha~_sn.e~ (M.); gha_sta_ polishes (Konkan.i); gasanava_, gahanava_ to beat, strike;

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

ga_nava_ to rub, smear (Si.)(CDIAL 4450). kas'un (past tense impersonal) to itch, scratch oneself (K.); kas. rub (Skt.)(CDIAL 2979). kas.a rubbing (Nais..) (CDIAL 2970). To rub the body; wipe off: khus, khos' to wipe off (Gypsy); ghasai rubs, polishes (Pkt.); gazoiki to grind (on flat stone with another stone)(Sh.); g^{a}hun to grind, polish (K.); gahan.u to rub, grind by rubbing; pp. gat.ho (S.); ghaun.a_ to grind, rub; ghau~h rubbing; ghi_h rubbing the body (P.); ghasnu to rub on; ghisinu to be rubbed (N.); gha~hiba to rub, grind (A.); ghi~sa_ to rub against; ghasa_ to rub (B.); ghasiba_ to rub, massage (Or.); ghisna_, ghasna_ to rub (H.); ghasvu~ to rub, polish (G.); gasan.u to be abraded, to fret (S.); ghassan., ghassun. to be rubbed, wear away (L.); ghasn.a_ (P.); ghisinu (N.); ghisya_unu to drag along; ghisrinu to be bedraggled (N.); ghisna_ to be rubbed (H.); gha_svu~ to wear away (G.); gha_sn.e~ (G.)(CDIAL 4450). gasa_t.i with great force (of rubbing)(Ka.); ghas.t.a_ a rough rub or wipe (M.); gasa_t.i tikku to rub with force (Ka.M.); gasa a sound used in imitation of a somewhat gentle, but quick way of rubbing; gasagasa tikku to rub as the teeth, the body, or clothes on a stone slab etc. (Ka.M.); gasagasa tur..i to make clean or bright by treading as grain (Ka.); gasi, gas.t.u the sediment or dregs of oil or melted butter or of pickles (Ka.Te.); kat.t.u (Ma.); kat.uku (Ta.) (Ka.lex.)

cf. dosta = zinc (Santali) turu rust, verdigris, flaw; turucu, turuci blue vitriol, spot, dirt, blemish, stain, defect, rust; turicu fault, crime, sorrow, affliction, perversity, blue vitriol; tukku, tuppu rust (Ta.); turis'u blue vitriol; turumpu, turuvu rust (Ma.); tukku rust of iron; tutta, tuttu, tutte blue vitriol (Ka.); tukku rust; mair(u)suttu, mairututtu blue vitriol (Tu.); t(r)uppu rust; trukku id., verdigris (Te.)(DEDR 3343). tuttha, tutthaka blue vitriol (used as an eye ointment)(Sus'r.); tu_taka (Skt.); dhu_rta iron filings (SKt.); tutho blue vitriol or sulphate of copper (N.); tuth (B.); thoth, thothas (K.); thotha_ (P.); tu_tio (S.); tutiya_ (A.); tu~te (B.); tutia_ (Or.); tu_ta_, tu_tiya (H.); tutiya_ (M.); tota_ (M.)(CDIAL 5855). tuttam < tuttha a prepared arsenic, vitrio, sulphate or zinc or copper (Cu_t.a_.); tutty, blue or white vitrio, used as collyrium (Tailava. Taila. 69); tutta-na_kam < tuttha-na_ga zinc (Pin..)(Ta.lex.)

Tin: takaram tin, white lead, metal sheet, coated with tin (Ta.); tin, tinned iron plate (Ma.); tagarm tin (Ko.); tagara, tamara, tavara id. (Ka.) tamaru, tamara, tavara id. (Ta.): tagaramu, tamaramu, tavaramu id. (Te.); t.agromi tin metal, alloy (Kuwi); tamara id. (Skt.)(DEDR 3001). trapu tin (AV.); tipu (Pali); tau, taua lead (Pkt.); tu~_ tin (P.); t.au zinc, pewter (Or.); taru_aum lead (OG.); tarvu~ (G.); tumba lead (Si.)(CDIAL 5992). cf. Alloy: tara_ alloy of 8 parts of copper to 5 of tin, used for making metal vessels (pukar..tara_-p- po_kkillai) (Cine_n-. 169)(Ta.lex.)

Silver; gold: cokka-k-kat.t.i-vel.l.i, cokkavel.l.i pure silver (Ta.); cokkabel.l.i id. (Ka.); cokkabol.l.i id. (Te.); cokku gold; cokuca_ < sogsa_ pinchbeck, gold-like alloy of copper and zinc (U.); cokucu refinement, neatness; fineness, as of work; superior quality (Ma.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

In the Babylonian Talmud (+2nd century), asemon is a commonly used word referring to bullion (gold, silver or mixed). Leiden X papyrus (ca. +3rd century) says: "no.8. It will be asem, (i.e. electrum, an alloy of gold and silver) which will deceive even the artisans (a tin-copper-gold-silver alloy); no.12. Falsification of gold (a zinc-copper-lead-gold alloy)..." (Needham, Joseph, 1971, ***Science and Civilization in China***, Vol. 5, Part II, pp. 18-21). Asem denoted the natural alloy of silver and gold; it also meant any bright metal made with copper, tin, lead, zinc, arsenic and mercury. Twelve or thirteen different alloys were called asem. (ibid., p. 45). 'The existence of this alloy (assem) may have been the original cause for the suggestion of transmutation since by adding silver to it, one would get a metal nearly identical with the crude silver from the mine; and by adding gold, something indistinguishable from gold. [The paucity of the Egyptian language may perhaps have been responsible for a confusion. Gold was the 'yellow metal', and the alloy produced was also a 'yellow metal'.]' (Hopkins, A.J., 1967, ***Alchemy***, pp. 103-4).

The presence of zinc in a Lothal artefact (2200-1500 B.C.) (No. 4189) assayed: 70.7 percent copper; 6.04 zinc; 0.9 Fe, 6.04 acid-soluble component (probably carbonate, a product of atmospheric corrosion). The zinc and other components could have come from the Ahar-Zawar area, Rajasthan. The next dated brass artefacts are: from the Gordian tomb in Phrygia of the eigth and seventury B.C. and Etruscan bronze of the fifth century B.C. containing 11 percent zinc.

KTM Hegde and Ericson, J.E., 1985, Ancient Indian Copper Smelting Furnaces, in: *Furnaces and Smelting Technology in Antiquity*, ed. P.T. Craddock, Occasional Paper No. 48, British Museum, London, pp. 59-67: The survey covered six ancient copper ore mining and smelting sites in the Aravalli (Arbuda) hills extending over a thousand kms.: Khetri and Kho Dariba in NE, Kankaria and Piplawas in the Central part and Ambaji in SW.. A large majority of mine-pits measure 7-8 metres in dia. and 3-4 metres deep showing evidence of fire-treating of the host rocks on the mine walls to widen rock joints. The evidene indicated probable mining in the chalcolithic period. Timber supports recovered from a gallery at a depth of 120 metres at Rajpura-Dariba mines in Udaipur District were radio-carbon dated to 3120+_ 160 years before the present (1987). This correlates with the zinc-containing copper artefacts of Atran~jikhera.

kasa = quality of gold or silver (as determined by rubbing it on a touch-stone); kas. To rub, to test (Skt.); kas = pith (Arabic); kas = remunerativeness (of a trade)(G.) kasan. = rubbing, testing; kasan.uvum = to mix by gradually rubbing the ingredients together, to mix by rubbing (G.) kasot.i_ (kasa ‘rubbing’ + vr.tti ‘a circle’) a touchstone, generally round in form; making a trial, ann experiment (G.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

kas’ = an iron instrument for digging; kos’ = an iron bar sharpened at one end, used as an instrument for digging (G.) kus’ = a ploughshare (Skt.)
kus' one-horned (of ibex, markhor, etc.)(Sh.); kus'ika squint-eyed (RV.); kus'o maimed, crippled; kus'ulo having a bit broken off (e.g., a cup), maimed ? (Sh.); kus'a depraved, mad, inebriate (Skt.)(CDIAL 3364).cf. us.un. young male ibex (Kho.)(CDIAL 1856).

kasabi_ = an artist, an artisan; adj. skilful, clever (G.) kasab (Arabic) a business, a trade, a profession; conversancy in an art, proficiency; an artifice, a device (G.) kasa_ya, kasa_ba a butcher (Ka.); kasa_i_ (M.)(Ka.lex.) kaca_ppu slaughter of animals for food; butcher (Ta.); kassa_b (U.)(Ta.lex.)

kasi_do (Persian kas’i_dan to draw) embroidery; a piece of brick or tile burnt in fire and turned hard (G.) kaja (kaji-) to be congealed, solidified by growing cold; ganja (ganji-) to solidify, coagulate, become solid (Kui); kajali = to be congealed, become curdled (Kuwi)(DEDR 1102). kas- = to be lit (as fire), burn (Kond.a); hiccu kahinomi = we kindle fire (Kuwi)(DEDR 1090).

kasi_ trench, watercourse (S.); kass catch drain, ravine (L.); kassi_ small distributing channel from a canal (L.); ka~_s artificial canal for irrigation (G.)(CDIAL 2909).

kasabo = a town (G.); kasvah = a town (Arabic)

kha_siyum = a double bag to load a donkey with (G.) ka_sad (Arabic) a messenger, a carrier; a runner; ka_sadiyum = serving as a messenger, carrying a message (G.) kaccha, kaccho = a piece of cloth worn round the loins (Dh. Des. kaccha_ fr. Skt. kaks.a, kaks.a_, kaccha ‘the hem of a lower garment tucked up into a waistband’] (G.) kaso = to plait, a frill, a plait; kaskasao = to tighten, to pull tight, pull together; kaci, kacni = a piece of cloth worn round the loins as a skirt; kaci, kaca = a piece of cloth worn round the loins (Santali) kaccai = girth, girdle; kaccu = belt, girdle (Ta.); kacca = girdle, waist-belt, long cloth (Ma.); kacce = end of lower garment gathered up behind and tucked into waistband (Tu.)(DEDR App. 20; CDIAL 2592; Skt. kaks.ya_; cf. Pali. Pkt. kaccha_). Kan~cip (kan~cit) to fasten bullock to yoke (Pa.); kaccu to join (Ka.); gac- (-c-) to tie, bind (Pe.)(DEDR 1099). Kaccu = a kind of corset worn by Indian women in ancient times (Ta.); bodice to confine the breast (Ma.); Skt. kan~cuka (DEEDR 1098).

Bull's head (bucranium) between two seated figures drinking from two vessels through straws. Yale tablet. YBCE.5447; dia. c. 2.5 cm. Possibly from Ur. Buchanan, studies Landsberger, 1965, p. 204; A seal impression was found on an inscribed tablet (called Yale tablet) dated to the tenth year of Gungunum, King of Larsa, in southern

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

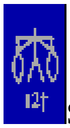
Babylonia--that is, 1923 BCE according to the most commonly accepted ('middle') chronology of the period. The design in the impression closely matches that in a stamp seal found on the Failaka island in the Persian Gulf, west of the delta of the Shatt al Arab, which is formed by the confluence of the Tigris and Euphrates rivers. We find that on the top register, above the bull's head, the Yale tablet shows two squares with divisions flanking a circle while in the Failaka tablet shows two birds with wings flanking a tree (or corn stalk).

bhat.i = liquor from mohwa flowers (Santali)[33]

bat.hi = a furnace for melting iron-ore (Santali)

kut.i = a woman water-carrier (Te.lex.) **kut.i** = to drink; drinking, beverage (Ta.); drinking, water drunk after meals (Ma.); kud.t- to drink (To.); kud.i to drink; drinking (Ka.); kud.i to drink (Kod.); kud.i right, right hand (Te.); kut.i_ intoxicating liquor (Skt.)(DEDR 1654).

Water-carrier **kut.i** = a woman water-carrier (Te.) [Rebus: **kut.hi**, 'furnace']


Sign 12

Seal impression, Ur (Upenn; U.16747); [After Edith Porada, 1971, Remarks on seals found in the Gulf States. *Artibus Asiae* 33 (4): 331-7: pl.9, fig.5]; Parpola, 1994, p. 183; water carrier with a skin (or pot?) hung on each end of the yoke across his shoulders and another one below the crook of his left arm; the vessel on the right end of his yoke is over a receptacle for the water; a star on either side of the head (denoting supernatural?). The two celestial objects depicted on either side of the water-carrier's head can be interpreted as a phonetic determinant: **ko_l.** 'planet'. The whole object is enclosed by 'parenthesis' marks. The parenthesis is perhaps a way of splitting of the ellipse (Hunter, G.R., *JRAS*, 1932, 476). An unmistakable example of an 'hieroglyphic' seal. enclosure signs of the field: **( )**

Rebus: **kol =** metal (Ta.) Two ko_l. 'planets'; rebus: **kut.hi kol kin** = two furnaces for metal vessels.

kut.ila = bent, crooked (Skt.) kut.ila (Skt. Rasaratna samuccaya, 5.205) Humpbacked kud.illa (Pkt.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

( ) The glyph of a curved line when mirrored becomes a ligature, an enclosure to other glyphs.
kut.ila, katthi_l = bronze (8 parts copper and 2 parts tin) [cf. a_ra-ku_t.a, 'brass' (Skt.)]

Thus the ligatured glyph with enclosing 'brackets' connotes a bronze furnace: **kut.ila kut.hi**

Signs 12 to 15 including variants and ligatures This sign could be a synonym of **kut.i** = water-carrier (Te.)

Alternative:
ka_ja carrying-pole (Pali); kahar (K.); ka_ha_r = a low caste of palanquin-bearers and water-carriers (B.); ka_ha_l.a, ka_ha_ra, ka_a~_l.a, ka_a~_ra a low caste of bearers (Or.); kaha_r = palanquin-bearer, water-drawer (H.); palanquin-bearer (M.)(CDIAL 3011). **kahar** = a Hindu caste, a palki bearer (Santali.lex.)

Buffalo-horned divinity. Painting on a jar. Kot Diji. C. 2800-2600 BCE [After Khan 1965, pl. XVIIb; cf. Fig. 2.25 in JM Kenoyer, 1998, *Ancient cities of the Indus Valley Civilization*, Karachi, Oxford University Press].

go.l- (god.d.-) to beat, shoot with bow; god. to cut with axe (Kol.); gor.- (got.-) to strike, beat, kill (Nk.); kol. (kol.v-, kon.t.-) to strike, hurt; ko_l. killing, murder (Ta.); kol.ka (kon.t.-) to hit, take effect, come in contact (Ma.); kol.l.ikka to hit; ko_l. hitting, wound, damage (Ma.); kol.-/kon.- (kod.-) to pain, trouble (Ko.); kwil. (kwid.-) to quarrel (To.); kon.pini to hit; kol.puni, kolpuni to come into collision (Tu.); konu to be pierced as by an arrow (Te.)(DEDR 2152).

ko_l. = a planet, navagraha; ra_ku (planet)[Skt. ra_hu] (Ta.lex.)
ko_l.am = round (Ta.lex.)
ko_l.ai = mouse (Ta.lex.)

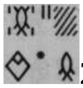
Water-carrier (rebus homonyms: ko_l., planet; kol.i_ water-carrier: hence, the hieroglyph depicting two stars with the water-carrier pictograph; thus, the depiction of fig around many standing persons in inscriptions may be treated as a phonetic determinative of the lexeme ko_l.i which also represents a fig family of trees which bear fruit without blossoming).

Alternative 1: **ko_l.** 'planet'; rebus: **kol** 'metal'

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

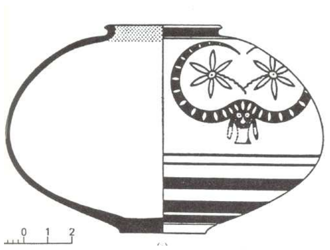
Alternative 2: **ukka_,** ‘stars’; rebus: **ukka_,** ‘furnace’; ka_~vad.iyo, ‘water-carrier’; rebus: kamat.ha_yo, ‘carpenter’; alternative: kut.i, ‘woman water-carrier’; rebus: kut.hi, ‘furnace’.

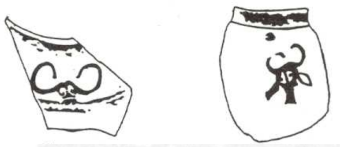
Glyphs showing seated persons in yogic posture

m0305AC  2235 Pict-80: Three-faced, horned person (with a three-leaved pipal branch on the crown with two stars on either side), wearing bangles and armlets. Two stars adorn the curved buffalo horns of the seated person **with a plaited pigtail**.

ukka_, ‘stars’; rebus: **ukka_,** ‘furnace’; together with horns, ku_t.a; rebus: ku_t.am, workshop; the glyph on m0305 is partly read as: furnace, workshop.

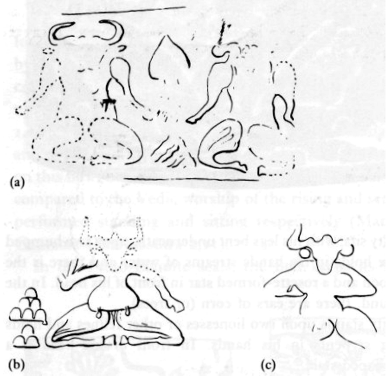
Substantive: *suki* ‘a small silver coin, a four anna or two anna bit’; *t.aka* ‘silver, rupee, money’ (Santali)





suk’erika ‘stars’ (Kuwi)(DEDR 2646) *sukar*, *sukor* ‘the planet vennus as evening star’ (Santali) Rebus: *sokol* ‘fire’ (Santali) *bar* ‘two’; Rebus: *bara* ‘oven’
Seated person: *hasani* ‘fireplace’; *asani* ‘seated’

Motif of buffalo horns is combined with six-pointed star. [After Parpola, 1994, Fig. 14.19: Painted pottery, c. 3000-2600 BCE. a. Kot Diji, Sind; b,c. Gumla, NW Frontier Province; d. Burzahom, a Kashmir Neolithic site. After H.D. Sankalia, 1974, *The prehistory and protohistory of Bha_rata and Pakistan.* Poona, 354, fig. 88: k].



Buffalo's horns. Gumla, NW Frontier province. After Sankalia 1974: 354, fig. 88: b (=b), c (=c)

Buffaloes sitting with legs bent in yogic a_sana. Susa Cc-Da, ca. 3000-2750 BC, proto-Elamite seals: (a-c) After Amiet 1972: pl. 25, no. 1017 (=a); and Amiet 1980a: pl. 38, nos. 581-2 (b-c)

sal ‘Indian gaur’; **sal sakwa** ‘horns of indian gaur’.

Furnace or forge of a smith; a goldsmith's smelting pot; torch: ukka_ (Vedic ulka_ and ulkus.i_; Latin volcanus; Old Irish olca_n to be fiery) firebrand, glow of fire, torch; tin.-

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

ukka_ firebrand of dry grass; **ukka_** a furnace or forge of a smith; a meteor; ukka_-dha_ra a torch-bearer; ukka_-pa_ta falling of a firebrand, a meteor; ukka_-mukha the opening or receiver of a furnace, a goldsmith's smelting pot = kamma_r'uddhana (Pali); ukka_cana_ enlightening, clearing up, instruction; ukka_cita enlightened, made bright; (fig.) or cleaned, cleared up; ukka_ceti to bale out water, to empty by means of buckets (Pali)(Pali.lex.) Image: fireplace: cf. cu_l.ai kiln, furnace, funeral pile (Ta.); culli_, ulli_ fireplace (Pkt.)(DEDR 2709)(CDIAL 4879). **huko, hukko** [Hem. Des. **ukka_** fr. Skt. **ulka_** a firebrand; Arabic **hukka** a casket] a smoking apparatus; a *hukkah* (G.) **huka** the hooka, the hubble bubble (Santali) **sukar** evening star (Santali.lex.) cukkai star (Ta.); cukka star (Te.); cikke, cikki star (Ka.); sukka star (Kol.); cukka (c = ts) id. (Nk.); cukkin id. (Nk.); cukka id. (Pa.); sukka star (Ga.); sukkum, huko, hukka, hukkom, hukka, ukkum, ukka, ukam id. (Go.); suka id. (Kond.a); huka (pl. -n) id.; hukeran, hukerin (pl. only recorded) stars (Pe.); hukerin id. (Mand..); suka star (Kui); hu_ka, hukka id.; suk'erika stars (Kuwi)(DEDR 2646). http://www.hindunet.org/saraswati/dictionary/2863TO.HTM 3132.Bright; handsome: s'ukra bright; brightness (RV.); s'ukla bright, white (AitBr.); bright half of month (Gr.S'r.); sukka bright (Pali); s'ukar pretty, pleasant; s'uka_r quietly (Gypsy); s'u_kri naked (woman)(Kal.); chuk good fortune (N.); suk bright, white; bright half of month (H.); su_kad.i sandal-wood (OG.); sukhar. (G.); sukkila, sukkilla bright, white (Pkt.); s'ukl.i_ moon; s'uklo_ white (WPah.); s'ukula white (D..); sukilo white, shining (Ku.N.); xukula_ (A.); sukka planet, star (Pali); sukka the planet Venus (Pkt.); s'u_k-ta_ra_ (WPah.); suk-ta_ra_ Venus (B.); su_k, suk Venus, Friday (H.); su_k Venus (M.)(CDIAL 12506).

Meteor, to shine ul.ku, ul.uku (Ka.); ulka_ (Skt.); ul.ku = to shine (Ka.); **ukka_** (Pkt.) [Note two stars shown as phonetic determinants of a water-carrier on a Mesopotamian Gadd seal]. **ukka_,** 'stars'; rebus: **ukka_,** 'furnace'; ka_~vad.iyo, 'water-carrier'; rebus: kamat.ha_yo, 'carpenter'; alternative: **kut.i** 'woman water-carrier'; rebus: **kut.hi** 'furnace'.

kut.i_ hut (G.Skt.)

kut.hi, kut.i (Or.; Sad. **kot.hi**) (1) the smelting furnace of the blacksmith; **kut.ire bica duljad.ko talkena**, they were feeding the furnace with ore; (2) the name of e_kut.i has been given to the fire which, in lac factories, warms the water bath for softening the lac so that it can be spread into sheets; to make a smelting furnace; kut.hi-o of a smelting furnace, to be made; the smelting furnace of the blacksmith is made of mud, cone-shaped, 2' 6" dia. At the base and 1' 6" at the top. The hole in the centre, into which the mixture of charcoal and iron ore is poured, is about 6" to 7" in dia. At the base it has two holes, a smaller one into which the nozzle of the bellow is inserted, as seen in fig. 1, and a larger one on the opposite side through which the molten iron flows out into a cavity (Mundari.lex.) cf. **kan.d.a** = furnace, altar (Santali.lex.)

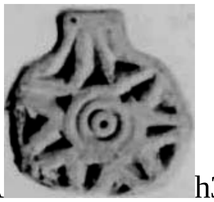
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

kut.i = a nosegay (Ka.lex.) gun.d.ri = a quail (Santali.lex.) gun.d.agi = waterfowl (Te.lex.) kut.is = white-throated munis, *urolоncha malabarica* (Santali.lex.) gund.ral = a kind of quail (Go.)(DEDR 1696).

kutru, kutu = a dog, a puppy (Santali.lex.)

kut.i = the eyebrows (Santali.lex.)

An antelope is shown with a seven-pointed star around a dotted-circle on tablet h-349.

h349A

h349B

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Dotted circles and Standard

sa~gad. = lathe component (drill); san:ga_d.o = cutting stone; **san:gatara_s'u_** = stone cutter; san:gatara_s'i = stone-cutting; san:gsa_ru karan.u = to stone (S.), can:katam = to scrape (Ta.), san:kad.a (Tu.), san:kat.am = to scrape (Skt.) agud.e = brazier (Tu.)

s'agad.i_ (G.); saghad.i_, s'aghad.i = a pot for holding fire (G.) Firepan: san:gha_d.o, saghad.i_ (G.) [cula_ sagad.i_ portable hearth (G.)]

sangha_d.o (G.) (things) given for approval; (goods) taken from a shop to be bought if approved; taken without definite settlement of purchase.

Dotted circle[34]

Glyph: *khan:ghar, ghan:ghar, ghan:ghar gon:ghor* 'full of holes' (Santali)
Substantive: *kan:gar* 'portable furnace' (K.)

pa_sa = die (G.)

pa_sa_ lump of metal (H.)(CDIAL 7951).

san:gr.a, san:gr.i (Santali) = a pole with slings carried on the shoulders of two men

It may be hypothesized that the 'trefoil' glyptic motif is related to this lexeme, *tebr.a* 'thrice, three times'. tagad.o [Skt. trika, a group of three] the figure three (G.lex.) *t.haba t.hobo* = in a cluster, applied to fruit (Santali); rebus: *t.habu t.habu* = large, big, very big (Santali). **tamba** = copper (Santali)

Thus, the 'trefoil' motif may be read as: *tebr.a kan:ghar* 'copper [*ta(m)bra*] furnaces'. **tibira** = copper merchant (Akkadian). The 'priest-king' statuette adorned with a *uttari_yam* (*angarkha*, drape) with 'trefoil' embroidery is an apparent rebus representation of a very big copper merchant.

vahni = three (IE 7.1.2; EI 33; IEG)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

vahni = fire (Te.lex.) vahani = fire (Skt.G.lex.) vahana = fire (G.lex.) hutavahana = fr. huta, sacrificed, the oblation (Skt.) vaha_n.um = Hem. Des. viha_n.am = lighted (G.lex.)

va_hini = a self-sufficient division or unit of an army (Te.lex.) vahan.i (IA 18), meaning uncertain (IEG). **va_hini_pati** (EI 28; IA 10), leader of forces, a general, sena_pati (IEG)

bharata = embroidery; working flowers on cloth (G.lex.)

Substantive: *bharatiyo* a caster of metals; a brazier; **bharata** casting metals in moulds; *bharatara, bharatala, bharatal.a* adj. moulded; *bharavum* to pour into; to fill in; to put in; to fill; *bharatiyum* an invoice (G.)

Priest statue (DK 1909), Mohenjodaro; four views; white steatite, with remnants of red paint inside the trefoils of the robe; height 17 cm.; National Museum of Pakistan, Karachi; After Marshall 1931a:pl.98; Parpola, 1994, p. 212.

Trefoil motif and dotted circle motif on the uttari_yam worn on the stone statuette. A buffalo-horned headdress perhaps was added to the back of the head, to depict him as a chief. (After JM Kenoyer/Courtesy Dept. of Archaeology and Museums, Govt. of Pakistan).

bharan.d.a = master, lord: Un. 1.128; a bull (Skt.lex.) **bharan.yu** = a protector, master (Skt.lex.) **bharatha** = a world protector (= loka pa_la: Un. 3.115); a king; fire (Skt.lex.) **bharad** = in comp. for bharat: bharadva_ja = bearing speed or strength (of fight); a skylark (Skt.lex.) **bharad**-va_ja = name of a R.s.i (with the patronym

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

ba_rhaspatya, supposed author of RV 6.1-30; 37-43; 53-74; 9.67, 1-3; 10.137.1 and Purohita of Diva-da_sa, with whom he is perhaps identical; name of a district: Pa_n. 4.2.145; name of an Agni (MBh.)(Skt.lex.)

Three dotted circles appear on the robe of the sculpture in the round of a 'robed priest'. A dotted circle is also depicted as the eye of a fish or hare (Fish: H-329, H-330 and Hare: H-335).

potr. = priest of Vedic yajn~a (RV)
po_tra = the Potr.'s soma vessel (RV.), **pot** = jeweller's polishing stone (Bi.)

po_tramu = snout of a hog; po_tri = a hog; a boar (Te.)

po_tramu = a cloth; a ploughshare (Te.)

pot glass bead (P.); potti_ glass (Pkt.); pu_ti glass bead (S.); pote long straight bar of jewelry (N.); pot glass bead (B.); puti, pu_ti small bead (B.); puti necklace of small beads (Or.); pot glass bead (H.G.M.)(CDIAL 8403). pot.i-vet.t.i goldsmith's shears or scissors (to cut gold wire); pot.i solder, metallic cement; particle, fragment; that which is small (Ta.lex.) potti a kind of gem (S.I.I. iii,143)(Ta.lex.) Image: to perforate: cf. potir-ttal to pierce (Ci_vaka. 2778); potu-tal to be perforated (Tiv. Tiruccan. 73)(Ta.lex.) po~ti bead (B.)(CDIAL 4205). bud.hi mala a bead with wide hole (Santali.lex.)

t.hakkaru, t.hakkarud.u = a deity; an idol; an honorific title same as t.ha_ku_ru, t.ha_ku_ru = a father; a religious preceptor (Te.lex.)

ta_varam = lingam; ta_vara-lin:kam = lingam set up in tables for general worship; ta_varan- = God (Ta.lex.) tambal.a = a certain caste among s'u_dra, who are worshippers of S'iva and are priestlings in temples; tambal.i = a man of the tambal.a caste (Te.lex.) tammad.i = an attendant on an idol (Ka.); tambal.ava_d.u, tammal.a, tammad.i, tammali, tammal.ava_d.u (Te.)(Ka.lex.) tagidar = an overseer (Santali.lex.)

tamar = counselors, men guiding one's affairs: tammir- periya_r tamara_ vor..ukutal :(Kur-al. 444); tamar = servants (teva_ 907.1); tamar = relations, kindred (Ta.Ka.Ma.); friends, well-wishers (Pur-ana_. 157); tamarmai = friendship (Ta.); tamal. A female relative or friend (Ta.); taman- = a male relative or friend: cu_l.a_. araci. 182); tavan- < tapas = ascetic (Periyapu. Pura_n.aca_. 22); tavan- = religious austerity (Ta.lex.) tamaru (collo. pl. of ni_vu) you: used in respectful or polite address or to persons of higher station (Te.lex.) tavattar = ascetics; tavam < tapas = penance, religious austerities : Kur-al. 266 (Ta.) tameru, tamar, tamari, tamare = one who gives a bride away in marriage; a guardian (Tu.lex.) ta_mbu themselves (Kuwi); tamaru they, themselves (Kol.); ta_vu (Ka.); tamar = one's own people, relatives (Ta.)(DEDR 3162).tabe = dependent, subject; tabedar = a dependent, a follower, a subject; taben =

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

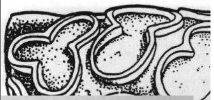
your (dual); tabol, tabon = ours, our, belonging to us (inclusive of person addressed)(Santali.lex.)

tabej = an ornament worn on the upper arm (Santali)

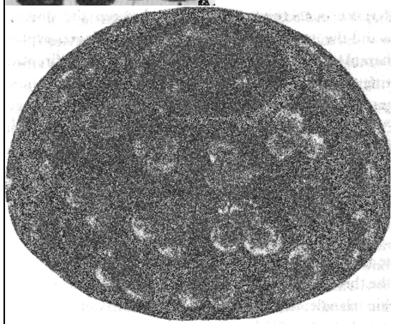
tavam < stava = praise, adoration: Ko_yir-pu. Iran.iya. 81 (Ta.lex.)

Bull with trefoil inlays; statue, Uruk (W.16017), c. 3000 BCE; shell mass with inlays of lapis lazuli; 5.3 cm. long; Vorderasiatisches Museum, Berlin; Parpola, 1994, p. 213.

Trefoil-decorated bull; traces of red pigment remain inside the trefoils. Steatite statue fragment; Mohenjodaro (Sd 767);. After Ardeleanu-Jansen 1989: 196, fig. 1; Parpola, 1994, p. 213.



Trefoils painted on steatite beads, Harappa (After Vats, Pl. CXXXIII, Fig.2)



Tre-foil inlay decorated base (for s'iva linga); smoothed, polished pedestal of dark red stone; National Museum of Pakistan, Karachi; After Mackay 1938: I, 411; II, pl. 107:35; Parpola, 1994, p. 218.

Two decorated bases and a lingam, Mohenjodaro.

Lingam, grey sandstone *in situ*, Harappa, Trench Ai, Mound F, Pl. X (c) (After Vats). "In an earthenware jar, No. 12414, recovered from **Mound F, Trench IV, Square I... in this jar, six lingams were found** along with some tiny pieces of shell, a unicorn seal, an oblong grey sandstone block with polished surface, five stone pestles, a stone palette, and a block of chalcedony..." (Vats, *EH*, p. 370).

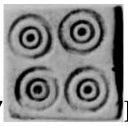
Dotted circles betwixt standard device on a tablet

8093a.<u>Image: to perforate; center</u>: **bhog** the centre, the middle; bhogtetre ubpe empty in the center (Santali.lex.) bogoc to make a hole in, to open, to slit; pin.d.hako bogockeda they cut the dam; bhugak, bhuk a hole, an opening, a cave; bha~ora bhugak a window

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

opening, an opening to admit light (Santali.lex.) bhokvum. to pierce; to perforate; to bore; to puncture; to drive in or through; to stab; bhok a perforation, a hole; a bore; bhoka_vu hollowness; emptiness (G.lex.) bon:ku adj. hollow, empty; bon:g hollow inside; **boga_ri** copper-smith (Tu.lex.) bokko, bokkea_ blister, pustule (Kon.lex.)

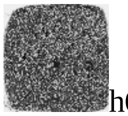
h855At h855Bt h855Ct

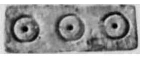
Kalibangan057Kalibangan058 m1259

m1260 h974Ait h974Bit h974Cit 4592

h978Ait h978Bit h978Cit 5412

h888Abit 4466 h889Abit 5477

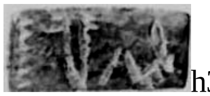
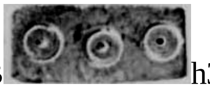
h832At h832Bt Tablet in bas-relief h638

h352A h352B h352C 4575 Pict-120: One or more dotted circles. [54 out of 67 objects on which this glyph occur, are miniature tablets]

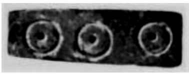
The text on top line occurs mainly on miniature tablets of Harappa over 46 times.

Top line of text 4575; third sign from left: Glyph, comb **kangha** (IL 1333) ka~ghera_ comb-maker (H.)

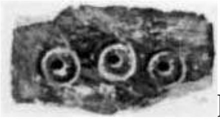
Rebus, substantive: **kan:g** = brazier, fireplace (K.)(IL 1332) Portable brazier; **ka~_guru, ka~_gar** (Ka.) whence, large brazier = **kan:gar** (K.)

h353A h353Bh353C 5416

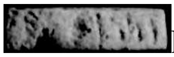
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

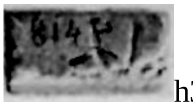
h354A h354Bh354C 5499

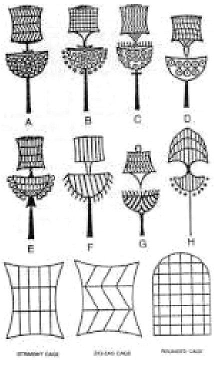
h359a h359B h359C

h361A h361Bh361C 5476

h362A h362B h362C 5466

h365A h365B h365C h365E

h367A h367B h367C h367E



4401

Tablet in bas-relief, Mohenjodaro m490: insignia carried in procession: standard, unicorn, ?pennant +?

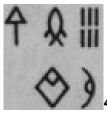
Styles and structure of the standard and the top portion (cage?); cf. Mahadevan 1984: 185; Rissman 1989: 162

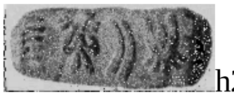
The top portion resembles a drill-lathe and a drill-head (gimlet). The wavy lines inscribed are a stylised depiction of 'turning motion' of the lathe. The style depicted as G is related to the practice of inserting the upper pivot of the drill-head into a coconut-shell; see below.

Phtanite drill-heads from the surface of MNSE area, Moenjodaro (Massimo Vidale, 1987, p. 147).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

h098

4256 Pict-122 Standard device which is normally in front of a one-horned bull.

h228A h228B Standard device which is normally in front of a one-horned bull. The device is flanked by columns of dotted circles. 19 out of 19 occur at Harappa. [See h225 to h228].

h292A h292B m4443 Standard.

h293A h293B 4441 Standard.

h887Ait h887Bit (Incised tablet)

m1408At [The standard device is part of the tablet with a text containing four signs.]

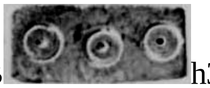
m0008a and m0009a [Note the orthography on the device: The top portion ends in a pointed end, shaped like a gimlet [**tamiru** (gimlet); rebus: **tavaru**, 'tin'] has wavy lines indicating churning motion of a lathe: **san:gad.a**; the bottom portion is ligatured with dotted circles, indicating drilled beads; smoke emanates from the bottom pot held on a rod, indicating it to be a portable furnace: **san:gad.a**]. Combined with tavaru, the device connotes: **tavaru san:gha_ta**, (i.e. tin + composite material) alloyed with tin! The bill of materials indicated by the inscription is a list of metal weapons and tools made with tin alloy.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

m0008a 1038	m0009a 2616

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

(Note the churning motion using a gimlet and emanating smoke depicted on the upper register of the lathe device and the dotted circles on the bottom vessel; both are mounted on a central 'stele') The dotted circles which appear on the bottom vessel on m008 are also seen on miniature tablets and other inscribed objects.

h353A h353Bh353C miniature tablet, incised with 3 dotted circles similar the ones found on the bottom vessel.

[Reconstruction after I. Mahadevan, 1984, pp.165-86]

[Note the 'stele' found in fire-places in Kalibangan, Banawali and Dholavira and other Sarasvati River ancient settlement sites.]

Carved Ivory Standard in the middle har501 Harappa 1990 and 1993: representations of ‘standard device’ a. faience token (top portion ends in a sharp edge like a gimlet); b. standard device (top portion has cross-hatches, perhaps to denote a churning motion; the bottom portion has dotted-circles, perhaps to denote perforation using a gimlet); c. faience token. “Although this object is split in half, it was clearly made on a lathe and probably was cylindrical in shape. The top of the object is finished and incised with a circle motif, while a broken spot on the lower portion indicates where the stand shaft would have been.” [From Richard H. Meadow and Jonathan Mark Kenoyer, *Harappa Excavations 1993*: the city wall and inscribed materials, in: *South Asian Archaeology* ; Fig. 40.11, p. 467. Harappa 1990 and 1993: representations of 'standard'; 40.11a: H90-1687/3103-1: faience token; 40.11bH93-2092/5029-1: carved ivory standard fragment (split in half, made on a lathe and was probably cylindrical in shape; note the incisions with a circle motif while a broken spot on the lower portion indicates where the stand shaft would have been (found in the area of the 'Mughal Sarai' located to the south of Mound E across the Old Lahore-Multan Road); 40.11c H93-2051/3808-2: faience token]

A stylized standard device? *san:gad.a*, ‘portable furnace’.

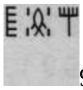
Hundreds of orthographic representations match this description of this ligatured device. See for example m0021, m0029, m0035

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

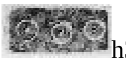
m0021a 2103	m0029a 2033

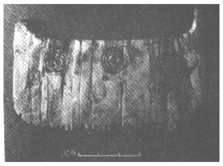
Pict-123 Standard device which is normally in front of a one-horned bull. The device is flanked by columns of dotted circles.

Glyph: *khan:ghar, ghan:ghar, ghan:ghar gon:ghor* ‘full of holes’ (Santali)
Substantive: *kan:gar* ‘portable furnace’ (K.)

Rupar1A Rupar1B 9021

Dotted circles appear on all sides of a seal or tablet (for e.g., M-352, M-1256, M-1260, H-128) or get inscribed on the ‘cult object’.

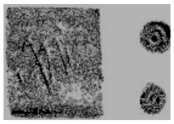
h353C miniature tablet, incised with 3 dotted circles similar the ones found on the bottom vessel.



Dotted circles also adorn inscribed ivory objects.

Kalibangan, Ivory comb with three dotted circles; Kalibangan, Period II; Thapar 1979, Pl.XXVII, in: *Ancient Cities of the Indus.*

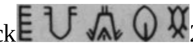
After Vats, Pl.CXIX,.No.6 An ivory comb fragment with one preserved tooth and ornamented with double incised circles (3.8 in. long).

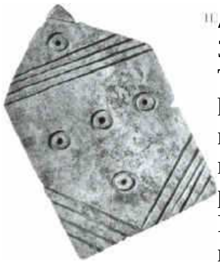
 h1017ivorystick

4561 Ivory rod, ivory plaque with dotted circles. Mohenjodaro. [Musee National De Arts Asiatiques Guimet, 1988-1989, *Les cites oubliees de l’Indus Archeologie du Pakistan*.]

m1651Aivory stick m1651D ivory stick

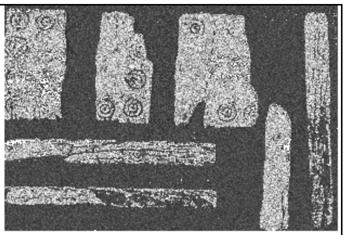
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

m1651F ivory stick2947 m1652A ivory stick m1654A ivory cube m1654B ivory cube m1654D ivory cube



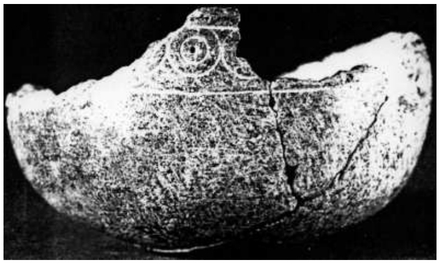
Amulet (?) Sonkh, Mathura, early 3rd cent. BCE.Bone. 5.7X3.4 cm. (MIK I 3242). The dotted circles are a motif dominant in inscribed objects of the civilization. The motif occurs on ivory objects and also on the 'standard device' in front of the 'one-horned heifer bull'. Elsewhere, it has been interpreted as, 'd.ha_l' connoting a shield; it is natural that this symbolism gets perpetuated on a 'protective device' such as an amulet made of bone. "Cracks at the tip of this plaque indicate that this object has only been preserved in a rather fragmentary condition... A comparison with a piece from Prabhas Patan (Gujarat) which is relatively intact leads to the conclusion that this amulet represents the torso of a human, possibly female, figure. Originally, there must have been two horizontally stretched arms attached to the top of this torso as well as an inverted triangle which represented the face of the figure (see Ghosh 1957: 17 to pl. XVIII B5 and comp. Ghosh 1956: 14 to pl. XXIV B; see also Dwivedi 1976: 55f. and 59). Incised on the polished front side of the plaque there are parallel lines arranged in horizontal and diagonal patterns, as well as five circles, each with a dot in the centre. On the plaque from Prabhas Patan similar motifs were applied to suggest eyes (perhaps also a nose or a mouth), breasts and fingers. The remaining incisions, as seen on this fragment from the Museum of Indian Art, Berlin, may not be indicative of anything in particular: their purpose appears to be decorative -- to create a harmonious design. The workmanship with its uniform execution and sharp edged cuts reveals a high degree of precision... simple lines-and-circles... Identical workmanship is apparent on relics of the Indus Valley Civilization (Marshall 1931: pl. CXXXII; Mackay 1937-38 pl. CXXV, CXXVIII, CXLIII; Vergessene Stadte am Indus Fruhe Kulturen in Pakisttan 1987: fig. 107). The dating of this particular piece is established from the stratum where it was found in the excavation site at Sonkh (Haertel 1993: 277)." (Heino Kottkamp, Exhibit 1 in: Saryu Doshi, ed., 1998, *Treasures of Indian Art: Germany's tribute to India's cultural heritage*, Delhi, National Museum, p.19).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



Finds at Altyn-depe: ivory sticks and gaming pieces (?) obtained from Sarasvati Sindhu civilization; similar objects with dotted circles found in Mohenjodaro and Harappa.

Bhagawanpura is a site located on the right bank of the River Sarasvati_ in Dist. Kuruks.etra. Remains of semi-circular huts leaving behind only post-holes and rammed floors have been found. From Period IB levels bones of true domesticatd horse, *equus caballus* have been found. Intersecting dotted circle designs are found on pottery of Painted Grey Ware which overlap the Late Harappan ware.



Mohenjo-daro. Dotted circle decoration on a steatite bowl (DK 3178), DK-B, house 3, room VIII (Jansen and Urban, 1985, RTWH, Aachen).

Vessel fragments with dot-in-circle design from Susa. Louvre Museum. At the Royal Cemetery of Ur, Woolley 1934: 558-59 found a small container with a narrow neck and sides decorated with three dot-in-circle designs.

Terracotta female adorned with 'dotted circles'; Period Namazga II; Yalangach Tepe, Geoksyur (Weiner, 1984, Fig. 183)

khan.d.i = a sar.i, a full dress for a woman, a piece of cloth twelve cubits long by two in width; khan.d.a = a piece of cloth suitable for the dress of a woman's sar.i; khan.d.i bande, bande = to dress, of women binding round waist (Santali)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

MS 2814 Royal inscription commemorating defeat of Magan, Melukham, Elam (?), and Amurru, and establishment of regular offerings to his statue, school text? Sumer, 2100-1800 BCE
MS in Neo Sumerian and Old Babylonian on clay, Sumer, 2100-1800 BC, 1 tablet, 14,8x14,0x3,3 cm (originally ca. 16x14x3 cm), 3+3 columns, 103 lines in cuneiform script.
Provenance: 1. Scribal training centre?, Sumer (2100-1800 BC); 2. Private collection, England (ca. 1965-1999).

Commentary: The text was copied from a Sargonic royal inscription on a statue in the Ur III or early Old Babylonian period. Magan was at Oman and at the Iranian side of the Gulf. Meluhha or Melukham was the Indus Valley civilisation (ca. 2500-1800 BC). This is one of fairly few references to the Indus civilisation on tablets. The 3 best known references are: 1. Sargon of Akkad (2334-2279 BC) referring to ships from Meluhha, Magan and Dilmun; 2. Naram-Sin (2254-2218 BC) referring to rebels to his rule, listing the rebellious kings, including "(..)ibra, man of Melukha"; and 3. Gudea of Lagash (2144-2124 BC) referring to Meluhhans that came from their country and sold gold dust, carnelian, etc. There are further references in literary texts. After ca. 1760 BC Melukha is not mentioned any more.

Contacts with Crete?

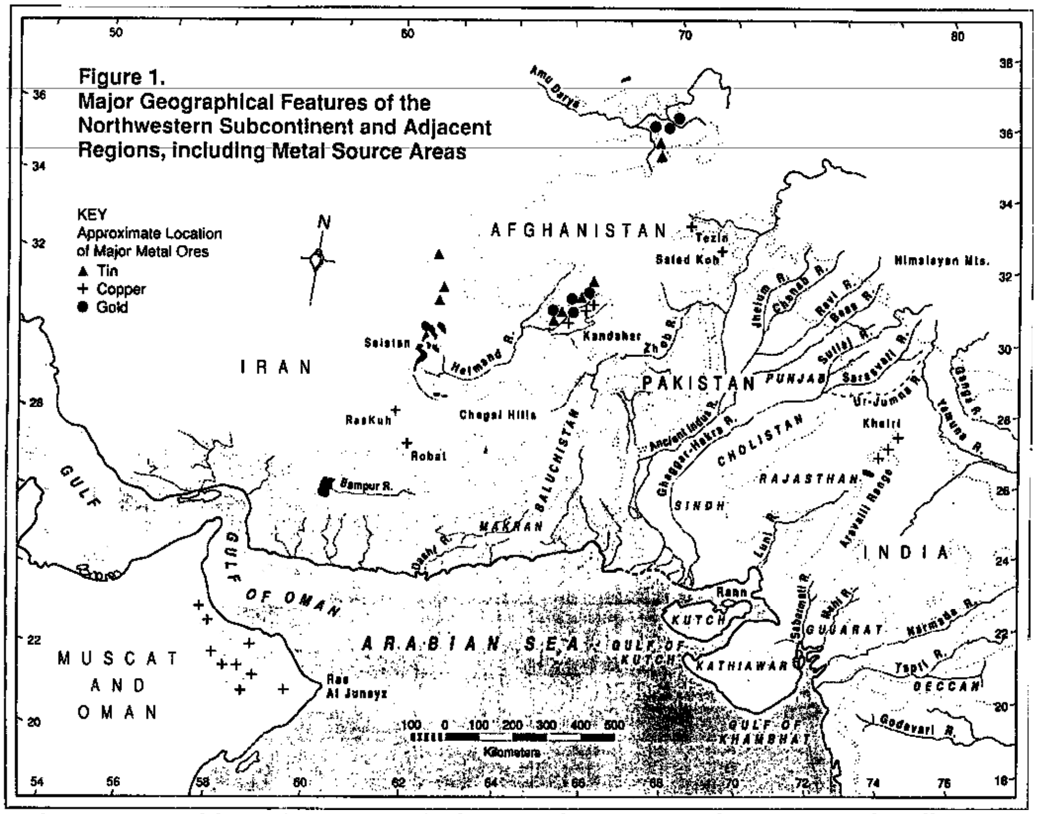
"The ancient Greeks themselves were quite conscious of the fact that, from the earliest times preserved in folklore, Crete had been occupied by various nations of whom more than one had spoken a 'barbarian', that is a non-Greek language. A celebrated passage in the ninth book of the *Odyssey* alludes to this mixture of nations: 'And one tongue is mixed with another; there are Achaeans therein, and great-hearted Eteo-Cretans, and Kydonians, and Dorians in their three tribes, and divine Pelasgians'...the late Professor Conway argued strongly that Eteo-Cretan was an Indo-European language possibly related to Venetic, and Krestchmer calls it a mixed speech embodying Anatolian elements related to Lydian in the east to Tyrrhenian in the west. It seems likely that this Eteo-Cretan language was spoken during the Bronze Age, but was not necessarily the only language spoken in Crete in those times." (R.W. Hutchinson, 1962, *Prehistoric Crete*, Baltimore, Penguin Books).

Glyph*: tamar* hole in a plank, commonly bored or cut; gimlet, spring awl, boring instrument; *tavar* to bore a hole; hole in a board (Ta.); *tamar* hole made by a gimlet; a borer, gimlet, drill (Ma.); tav to butt with both horns, gore (Ko.); *tamiru* gimlet (Tu.); *tamire, tagire* the pin in the middle of a yoke (Te.)(DEDR 3078).

Substantive: *ta_mra* copper (Skt.) *tamba* copper (Santali) *ta_mbum, ta_mra* copper (G.)

tabar = a broad axe (P.lex.) **tambira** = copper (Pkt.) **tibira** = merchant (Akkadian)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



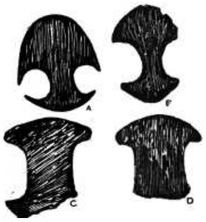
Major geographical features of the northwestern Bha_rata and adjacent regions, including metal source areas (composed after J. M. Kenoyer from various sources and Fig. 5.1 in: Jonahtan M. Kenoyer and Heather ML Miller, 1999, Metal Technologies of the Indus valley tradition in Pakistan and Western India in: *The Archaeometallurgy of the Asian Old World*, Ed. Vincent C. Piggott, University of Pennsylvania Museum Monograph 89. Philadelhia: University Museum Publications).

Likely source areas for raw materials such as agate, lapis lazuli, steatite, marine shell and copper were the Sarasvati and Sindhu river basins and the coastal regions of Makran coast, Gulf of Khambat and Gulf of Kutch. These raw materials were transformed into ornaments and tools at Harappa for local trade. The Ravi Phase denotes a newly discovered early phase of Indus culture (c.3300-2800 BC).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

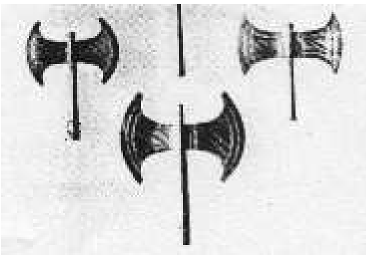
Double-axe

Axe in epigraphy and in archaeology



The double-axe is found at Harappa and in the copper hoards of Orissa. A.: Double-edged axe, deeply curved, Bhagarapir, Orissa; B. Double-edged axe, less curved, Bhagarapir, Orissa; C. Double-edged axe from Harappa; D. Double-edged axe from Harappa. [After S.P. Gupta, 1963, The copper hoards: the problems of homogeneity, stages and development, origin, authorship and dating, *Journal of the Bihar Research Society*, Vol. 49, Patna, pp. 1-7].

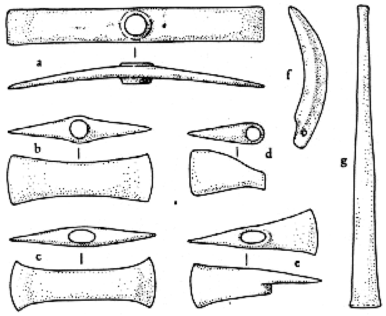
Vase with relief double axe. Mallia. MM II Sanctuary: Room 2 (Cat. 76). Courtesy of the French School of Archaeology. Athens. (Compare the axe pictograph with the one shown at Chanhudaro C23 at the top of the page).



Gold double axes. Arkalokhori. Cave. Herakleion. Archaeological Museum. Courtesy of Alison Frantz (Fig. 83 in: Geraldine Cornelia Gesel, 1985, *Town, palace, and house cult in Minoan Crete*, Goteborg, Paul Astroms Forlag).

Bull, double-axe, sacral knot

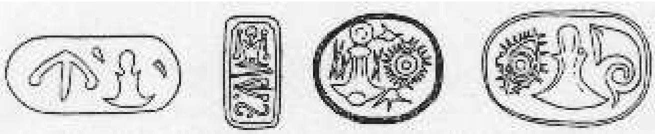
"The double axe, the most common of the cult symbols, occurred only in tombs in the Prepalatial period. In the Protopalatial period pottery marked with the double axe symbol was found in a town sanctuary, though the double axe itself has not appeared in such a cult room. An extant stand of this date, however, indicates that the double axe was put on display then. The stand and the double axe grew larger in the Neopalatial period. Elaborate incised and reduplicated blades of gold, silver, and bronze have been found. The symbol became more popular as a pottery motif, sometimes in connection with the bull and the sacral knot. The connection of the double axe with the bull suggest that the double axe is the axe of sacrifice and that as such it became the symbol of the divinity to whom the bull was sacrificed...The sacral knot, an object rarely found but often depicted on pottery together with the double axe, first appeared in a tomb deposit ranging from Prepalatial to Protopalatial in date...The horns of consecration, which probably represents the horns of the bull, rarely appears in the same sanctuary as the double axe and the bull...The snake, like the bird, became more prominent in the Postpalatial period. Unlike the bird it was always an attribute on a godess or a cult object...The meaning of the double axe is uncertain, but it seems to have been connected particularly with the palace at Knossos, which was known in mythology as the labyrinth. This word is derived from □□□□□□, a Lydian word meaning double axe according to Plutarch." (Geraldine Cornelia Gesel, 1985, *Town, palace, and house cult in Minoan Crete*, Goteborg, Paul Astroms Forlag).



Cretan bronze tools: a, double adze; b and c, double axes; d, single-bladed axe; 3, axe-adze; f, sickle; g, chisel.(After Fig.45 in: Sinclair Hood, 1971, *The Minoans: Crete in the Bronze Age*, Thames and Hudson) "The general all-purpose tool of the

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Bronze Age Cretans was an axe-adze with a shaft hole for mounting on a wooden handle. The same tool, but made of iron, is still used throughout Crete today; the axe blade for cutting trees and clearing undergrowth, the adze for hoeing and weeding. Another standard tool in Bronze Age Crete was the double-bladed axe. Single-bladed axes and double adzes were also employed. At first the shaft holes for these tools were circular, but later they were made oval. The oval shaft hole was an improvement, because the wooden handle could not twist round in it." (Sinclaid Hood, opcit., p. 84).



Seal-inscriptions; the logograph of an axe is central to these four samples (Source: *Scripta Minoa*; After Fig. 65G, 26,31,159, p 33 and p 7a in Fig. 3: F. Melian Stawell, 1931, *A Clue to the Cretan Scripts*, London, G. Bell and Sons Ltd.)

Shrine of the Double Axes

Godess with attendants from the Shrine of the Double Axes at Knossos (After Fig.117 in: Sinclair Hood, 1971, *The Minoans: Crete in the Bronze Age*, Thames and Hudson) "...a small room with a bench at the back on which stood little clay images of a godess and a god and their attendants or worshippers, together with two pairs of horns of consecration with holes in the top for inserting cult objects: either bronze double axes, as Evans thought, or leafy twigs or branches...Set into the floor was a circular tripod altar...The godess from the Shrine of the Double Axes has arms raised in the customary manner, and is wearing a long skirt and many necklaces and bracelets. On each wrist she carries a seal stone. Marks on her hands may be **meant for fishes**. On her head is a dove...Animals associated with Cretan godesses apart from snakes and doves included goats, lions, and imaginary sphinxes and griffins which were merely lions, usually with wings, and with the heads of women or of birds." (Sinclair Hood, opcit., pp. 134-135).

It is notable that the images of gods and godesses in the Hindu pantheon in historical periods are adorned with weapons on their multiple hands. A pair of fishes is depicted on the as.t.aman_galakaha_ra on Yaks.i sculptures of Sa_n~ci.

The fishes associated with the godess of the Shrine of the Double Axes are also associated with a short-horned bull on inscribed objects **ku_t.amu** = summit of a mountain (Te.lex.) **kut.t.ta_ra** = a mountain (Skt.lex.) **kudharamu** = a mountain, a hill (Te.lex.) kut.haur.i = a heap, a pile (of Sarasvati-Sindhu civilization.

The fish is rebus for an axe: **hako**; the double-axe (**hako**) is depicted by two fishes, which further gets stylised as s’ri_vatsa glyph.

hake = middle-sized axe for cutting wood (Mund.a); hake = axe (Ho.); go = axe (Bond.a.); vake (Kw); ak(h)ey (Mowasi); akh (Korku) (cf. Skeat and Blagdens' *Pagan Races of the Malay Peninsula*. A-3: gak, he:g etc. 'adze'; hak to split (Bahnar); hak to tear (Stieng); jik to cut (Stieng) ['Bonda Etymologies' in: Sudhibhushan Bhattacharya, 1968, *A Bonda Dictionary*, Poona, Deccan College, p. xxxi].

ah-ku-tal = to become sharp, acute (Ta.); cf. L. acu_tus, 'sharp', lit. 'sharpened', pp. of acuere, 'to sharpen', which is to acus, 'needle' (Ta.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

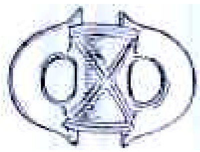
It is surmised that two distinct ancient lexemes had been used by the artisans who inscribed the objects of the civilization to denote property items possessed by warriors or items of metal weapons and tools traded:

hako could, using the rebus method, be orthographically pictured by 'fish' and atka by 'leaf'. It is also surmised that hako and atka connoted to distinct pieces of armour: hako, middle-sized axe to hew wood; and atka, breast-plate as part of coat of mail of a warrior.
hakka_-hakka = calling on, challenging (Skt. lex.) [heko = to brag, to boast, to chatter; ha~k = to call to cattle when driving them (Santali.lex.); akaval = calling, addressing (Ta.)(DEDR 10).] **hako** = a fish (Santali.lex.)

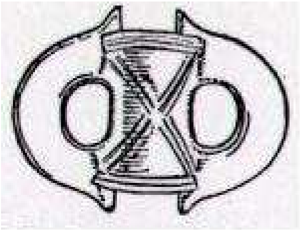
kut.t.a_ra = sexual intercourse (Skt.lex.) **ku_t.amu** = copulation (Te.lex.)

kut.aru = cock (According to the commentator Mahi_dhara (VS 25.4.4), the word is synonymous with kukkut.a, cock. The word is found in the Yajurveda Sam.hita_ only (TS 5.5.17.1; Maitra_yan.i_ S. 1.1.6; 3.14.4.20; 4.1.6; VS 24.23.39; cf. Zimer, *Altindischen Leben*, 93; cf. *Vedic Index*, I, p. 160). kut.ru, gut.ru = cooing of a pigeon (Ka.Te.)(DEDR 1667).

kut.ha_ru = a monkey (Skt.lex.) gun.d.an:gi = the white-faced black ape (Te.lex.)
kut.ha = crooked, bent (Santali.lex.) kut.i = id. (Skt.lex.)



kut.ha_ra = axe (Vedic.lex.) cutter 'knife' (Latin); kut.ha_rais. t.an:kais = with axes and spades; kut., kut.t. = to split (Vedic) (Surya Kanta, 1989, A *grammatical dictionary of Sanskrit (Vedic)*, Delhi, Munshiram Manoharlal, p.72). kut.ha_raka = an axe (Ra_ma_yan.a); a small axe (Bhartrr. 3.23); kut.ha_rika = a wood-cutter (Skt.lex.) kut.t.a_ka = cutting (Pa_n. 3.2.155). gun.d.ra = to cut into pieces, to make fine or small (Santali.lex.) **kut.a_ri, ko_t.a_ri, ko_t.a_li** axe (Ta.); ko_t.a_li, ko_t.a_l.i id. (Ma.); kod.ali (Ka.); kod.ari, kud.ari (Tu.); god.d.ali, god.d.eli, god.d.e_li, god.d.e_lu, god.ali (Te.); golli, goli_ (Kol.); ghol.i (Nk.); kod.li (Nk.); god.el (Go.); gor.el(i) (Kond.a); ku_r.el (large variety axe)(Pe.); kra_d.i (? for kr.a?li, gla'li large axe (Kuwi)(DEDR App. 32). kut.ha_ra, kut.ha_ri (Beng. Or. forms have l for r)(CDIAL 3244; cf. Burrow, *BSOAS* 35.541). **kudda_ramu, kudda_lakamu, kudda_lamu** = a sort of spade (Te.lex.) kut.ha_ra axe (R.); kut.ha_raka (VarBr.S); kut.ha_ri_ (Pali); kud.ha_ra, kuha_d.a (Pkt.); kuha_r.o (S.); kuha_r.a_ (L.P.); kulha_r.a_ (P.); kurha_r.i_ (WPah.); kulya_r.o, kulya_r. (Ku.); kur.a_l, kur.ul (B.); kur.a_la, kura_r.ha, kurha_r.i, kura_ri (Or.); kulha_ri large axe for squaring logs (Bi.); kulha_r.a_ axe (H.); kuha_r.o, kuva_r.i_ (G.); kurha_d. (M.); ken.eri (Si.); ket.eri, ket.e_riya long-handled axe (S.)(CDIAL 3244).



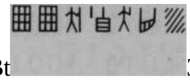
kud.i = a large hoe, the Indian digging implement, the kudali; t.amni kud.i = a narrow bladed kudali; guji kud.i this pattern has the hoe in the middle of the handle; kat.a kud.i a pronged hoe; t.had.ia kud.i the pattern handled like a hoe; saheb kud.i, angreji kud.i the English pattern of kudali; **kud.i sakam** the blade of the kudali (Santali.lex.) [Note the pictorial of 'leaf'; it may be read as 'sakam' or leaf, i.e. the metal blade of a weapon].guji kud.i = a kod.ali or hoe worked by taking hold of both ends of the handle (Santali.lex.) kat.a kud.i = pronged hoe; kat.a kat.i = cutting; to slash, kill (Santali.lex.). **kata** = a pit saw; kat = a steel spur put on a fighting cock; kat.i = a screw, nail (Santali.lex.) **kat.a** = leg and foot from the knee downwards; sim kat.a = a fowl's foot; bhid.i kat.a = sheep's trotters; hor. kat.a = a man's foot (Santali.lex.)

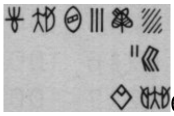
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Dagger and axes found in an Ur grave **Sumerian double-bladed axe, Ur** [V. Gordon Childe, 1929, *The Most Ancient East: the oriental prelude to European prehistory*, London, Kegan Paul, Trench, Trubner and Co. Ltd., Fig. 72 b.]

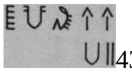
Double-bladed Sumerian axe, Ur.

Copper tablet (Double-edged battle-axe): Mohenjodaro M 0592B

m0592At m0592Bt3413 Pict-133: Double-axe (?) without shaft. [The sign is comparable to the sign which appears on the text of a Chanhudaro seal: Text 6422, Chanhudaro Seal 23].

Chanhudaro23 6402 Goat-antelope with a short tail. The object in front of the goat-antelope is a double-axe.

'A third type of axe that now appears for the first time has two blades; it is in fact the oldest double-axe.' (Childe, opcit., p. 179).

h232A h232B tablet in bas relief 4368 Inscribed object in the shape of a double-axe.

The double-axe on the copper tablet of Mohenjodaro is comparable to the Mesopotamian double-axe found at Ur.

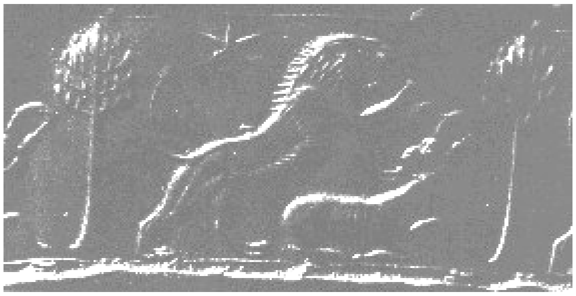
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Glyph ligatures

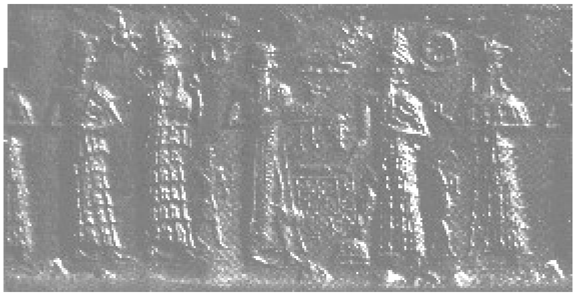
Relief of two Big-weather-beasts, UGALLU, a human figure with a lion's head and eagle's feet, guarding the doorway to the North Palace, Nineveh. British Museum, London

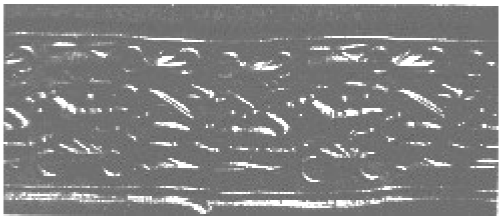
The North Palace of Asurbanipal had a room which Richard Barnett called the 'Susiana room'. This room had a single entrance and had "reliefs on three walls depicting the assault and capture of the Elamite city of Hamanu (Khamanu) and the exodus of prisoners from it, as well as apotropaic figures in the large recess in the northwest wall. The doorjambs had identical pairs of apotropaic figures. In a Babylonian text about such figures, which F.A.M. Wiggermann called Big-weather-beasts, a person who may have been a conjuration priest is ordered to draw two figures of Big-weather-beasts (UGALLU) on the gate and to invest them with the power to defend the gate against aggressors. The same procedure and the effect may be assumed for the gate in this room of Assurbanipal's palace. In addition, in the lower register under the Big-weather-beasts there was the relief showing a lion-man identified by Wiggermann as an URMAHLULLU, a creature thought to protect lavatories and bathrooms against Shulak, a lion or lioness-demon who haunted such rooms (*Babylonian Prophylactic Figures, p. 332*)...by eternalizing the effect of the enemies' defeat and misery, they were also expected to influence future events...

Cylinder-seal impression of a lion attacking a mountain sheep, Middle Assyrian period. Pierpont Morgan Library, New York



"The seals of the fourtheeenth to twelfth centuries BCE in northern Mesopotamia represent the art of the Middle Assyrian period. To appreciate the design engraved on a slender stone cylinder, it must be rolled over a flat surface of impressionable material such as Plasticene or some other product that can be hardened by baking. To illustrate how to appreciate a scene on a seal, I have chosen an example that shows a lion menacing a fallen mountain sheep. The heavily muscled lion extends his body to touch the back of the sheep with one paw. He raises the other paw menacingly over his victim's head. A pine tree terminates the scene. A star fills what would otherwise be an empty space, but it may also be a meaningful symbol...The meaning of scenes in which a lion or a hybrid monster attacks a horned game animal, which represent the majority of Middle Assyrian seal designs, is unknown. Perhaps they represent battles that were pictured with human soldiers...





Cylinder-seal impression portraying a griffin and lion attacking horned animal, Syro-Mitannian, fifteenth to fourteenth centuries BCE. Pierpont Morgan Library, New York

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

The seals of northern Mesopotamia and Syria in the fifteenth and early fourteenth centuries, the time of the Mitannian Empire, largely manifest a striking abstract style produced by mechanically rotating cutting wheels and drills.

Cylinder-seal impression of a king positioned before the sun-god and other deities, Old Babylonian, circa 1800 BCE. Pierpont Morgan Library, New York

Eagle, lion

Eagle incised on a ceremonial axe made of chlorite. Tepe Yahya. (After Fig. 9.6 in Philip H. Kohl, 2001, opcit.)

Eagle incised on the lid of perhaps a compartmented box made of chlorite. Tepe Yahya. (After Fig. 9.7 in Philip H. Kohl, 2001, opcit.)

hila a kite (S.); hill, hili (L.); ill kite, a kind of hawk (P.); ill kite, vulture (WPah.)(CDIAL 1593). i_lagradda = a species of vulture (Te.lex.) illala = a species of bird; hilla = a kind of aquatic bird (Skt.lex.) hil = a kite (P.lex.)

illi = lion, tiger (Pkt.); **i_l a** wild animal (H.)(CDIAL 1593).

il.a_ a curved instrument for cutting grass (M.) **ili_** a kind of weapon, a cudgel or short sword; i_li id. (Skt.); illi_, illiya_ short one-edged sword (Pali); ili_ a sort of sword; illa sickle, harrow (Pkt.); ili cudgel, short sword (B.); il.i dagger, knife; ira_ scythe (Or.); il.i_ a blade set obliquely in a stock for slicing vegetables; il.a_ curved instrument for cutting grass; il.at ploughshare scraper (M.)(CDIAL 1592). i_l.ige (Tbh. of i_lika) a curved instrument for cutting grass (Ka.); **il.a_** (M.); a blade set in a stock, used in slitting up vegetables (Ka.); il.i_ (M.)(Ka.lex.)

ila_l, ila_li = an iron bowl grated or open-mouthed, containing oil and rolls of cloth, etc.; it is attached to the end of a stick, and kindled upon holidays (Ka.); hila_la (M.)(Ka.lex.)

ile, ila_, id.e, ire, il.e, el.e = the earth; ile_s'a = a king; ileya piriya = a bra_hman.a (Ka.lex.) ila = the earth (Te.lex..) ila_val.aya = the circumference of the earth (Ka.lex.) ila_ = earth (Pkt.G.lex. Skt. fr. **i_l, i_s.** to go, to move (TS 6.4.2.6) **bali gitil**, gitil bali = grains of magnetic iron resembling sand; **gitil** = sand; gitlaha ot = sandy soil (Santali.lex.) **hila_, hilla_** sand, va_luka_, ba_lu_, reti (Pkt.lex.) **illari** = a house tax or hearth-tax (Te.lex.)

Split, crack

hil.a = a crack; hil.i = to crack, to burst, to split; hil.l.e = a small piece of wood or a piece of a stick used in the game of tip-cat (Ka.lex.) id.iyu = to fall to pieces; split, crack; id.upu = a breach, crack, hole (Te.lex.) **illi** small

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

hole (as in a pitcher), orifice in the teat; **cilli** leak, hole, crack (Ta.); cilli-kkuttu a little hole (Ma.); jilli small hole in an earthen vessel (Ka.); cilli small hole as in a pot, paper (Te.)(DEDR 2575).

hi_li = a peacock's tail; pi_li, **hilli** = a feather of a peacock's tail; an eye in a peacock's tail; navila hi_liya kan.n.u (Ka.lex.) **kanso il** = the first three or four large feathers in the wing of a bird; **il** = a feather (Santali.lex.)

id.a_ (in R.gveda) **il.a_, ila** = refreshing draught, refreshment, animation, recreation, comfort, vital spirit, RV; AV; AitBr.; offering, libation (especially a holy libation, offered between the Pra-ya_ga and Anu-ya_ga, and consisting of four preparations of milk, poured into a vessel containing water, and then partially drunk by the priest and sacrificers; personified in the cow, the symbol of feeding and nourishment), S'Br. 1.8.1.1; AitBr. (metaphorically) stream or flow of praise and worship (personified as the godess of sacred speech and action, invoked together with Aditi and other deities, but especially in the A_pri_ hymns together with Sarasvati_ and Mahi_ or Bha_rati_), RV; AV; VS; the earth, food, Sa_yan.a; a cow; the godess Id.a_ or Il.a_ (daughter of Manu or of man thinking on and worshipping the gods; she is the wife of Budha and mother of Puru_-ravas; in another aspect she is called Maitra_varun.i_ as daughter of Mitra-Varun.a, two gods who were objects of the highest and most spiritual devotion); name of Durga_; speech, BhP.; heaven; earth, MBh.; id.a_ya_s-pade (il.a_ya_spade), ind. At the place of Il.a_, i.e. of worship and libation, earth, RV; AV; id.a_vas = refreshing, granting fresh vital spirits; possessed of refreshment, refreshed; possessed of sacrificial food (Sa_yan.a), RV; containing the word id.a_, Ta_n.d.yaBr. (Skt.lex.) **ili** synonym of **bod.e** = beer brewed with any grains generally cultivated in Chota Nagpur; beer brewed from grains is divided into ar.e-ili, which is simply poured off from the dregs; eipaili, which is squeezed out from the dregs after addition of water; ili = to brew into beer, to brew beer; ili-n rflx. V., to indulge in drinking beer; ili-o to receive beer to drink ili-bat.i = a rice beer shop; ili-got. = a gathering for drinking beer, all sitting; ili-arki_ collective noun for all spirituous drinks; ili-mand.i – a banquet (Mundari.lex.) hi_luka = a kind of rum or spirit distilled from molasses (Skt.lex.) **i_d.a** = a date tree; i_d.ara-va_ru, i_d.iga-va_d.u (CITD), Telugu: a toddy-man or arrack-drawer (IEG). i_d.igeva_d.u = man of the toddy-drawer caste; i_d.iga = the toddy-drawer caste (Te.lex.)

Cylinder seal. Akkadian. Enki, water-god with streams of water with fish ; symbols of mountain and eagle; Person standing with bow and arrow with a lion looking up to him. .

sen:gel gidi = the male of the Indian king-vulture, *ologyps calvus* (Santali.lex.)

sen:gel = fire; sen:gel kut.ra = a spark of fire, a burning bit of wood; sen:gel ku_n.d. = a heavy fire (Mundari)

gitil bali = grains of magnetic iron resembling sand (Santali)

sen:gel gidi rebus: **sen:gel gitil =** (furnace) fire for meteoric iron fragments.

san:gil = to look up, raise or throw back the head (Santali); san:gil (Ho.) (Santali.lex.)

san:gin = a bayonet (Santali.P.H.) (Santali.lex.)

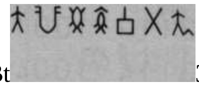
The ligature on the Nal pot ca 2800 BC (Baluchisan: first settlement in southeastern Baluchistan was in the 4th millennium BC) is extraordinary: an eagle's

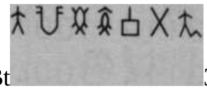
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

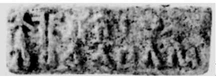
head is ligatured to the body of a tiger. In BMAC area, the 'eagle' is a recurrent motif on seals.

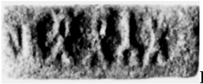
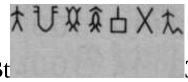
Ute Franke-Vogt: "Different pottery styles link this area also to central and northern Balochistan, and after about 2900/2800 BC to southern Sindh where, at this time, the Indus Civilization took shape. The Nal pottery with its particular geometric and figurative patterns painted in blue, yellow, red and turquoise after firing is among the earliest and most dominanstyles in the south."

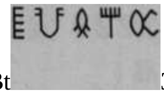
ugalu or urmahlullu = mythical weather-bird, 'eagle'. [See the pictograph of a lion ligatured with eagle's feet]. Could this connote cassiterite, 'tin-stone' alloy used to harden the bronze axe to make it a battle-axe?

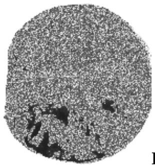
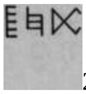
m0464At m0464Bt 3216

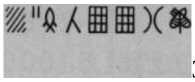
m0465At m0465Bt 3220

m0466At m0466Bt

m0467At m0467Bt 3209

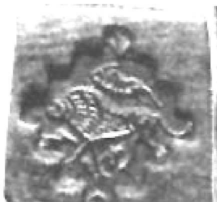
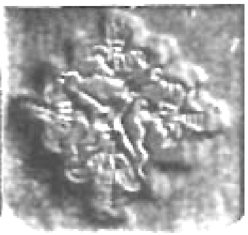
m0468At m0468Bt 3249

m1390At m1390Bt 2868 Pict-74: Bird in flight.

m0451At m0451Bt 3235

h166A, h166B **Harappa Seal**; Vats 1940, II: Pl. XCI.255.

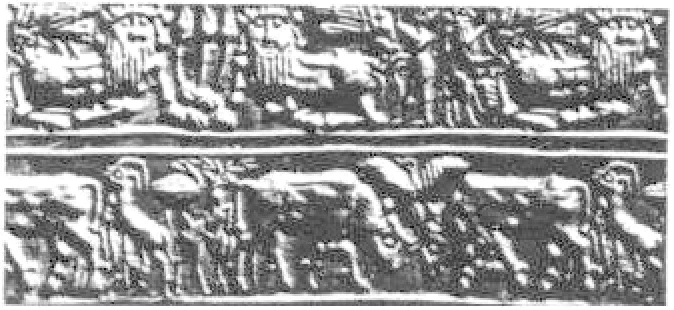
Two seals from Gonur 1 in the Murghab delta; dark brown stone (Sarianidi 1981 b: 232-233, Fig. 7, 8); eagle engraved on one face.

Seal impression. Louvre Museum; Luristan; light yellow stone; one side shows four eagles; the eagles hold snakes in their beaks; at the center is a human figure with outstretched limbs; obverse of the

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

seal shows an animal, perhaps a lion striding across the field, with a smaller animal of the same type depicted above it; comparable to the seal found in Harappa, Vats 1940, II: Pl. XCI.255.



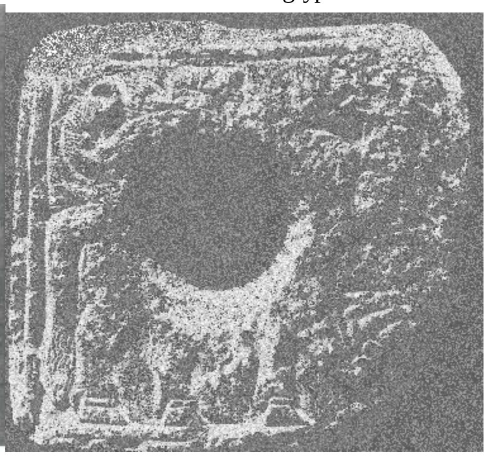
BM 22962; Wiseman, opcit, 1962, Pl. 22d; Above: Bull-men crouch beside triple-plant on mountain. Vultures on their backs. Hero and bull-man: In field: snake, scorpion. Below: Bulls bow below eagle: Stag and goat. In field: bird. Wiseman, Cylinder Seals, 21. Lazulite.

Nippur vessel with combatant snake and eagle motif. Istanbul Museum. The design is raised above the base; the vessel of chlorite was found in a mixed Ur III context at Nippur in southern Mesopotamia. An indication of the presence of the motif in Mesopotamia and in southwestern Iran, Failaka islands in the Gulf and SSVC.

pajhar. = the Indian tawny , the Indian black eagle, the Indian crested hawk; eagle, buru pajhar., the hill-eagle, aquila imperialis; hako sat.i pajhar. = a fish-eating eagle (also called dak pajhar.); huru pajhar. = the imperial eagle (Santali.lex.) panji-il = a certain feather in each wing of a vulture (Mundari.lex.)

Snake, scorpion, bull

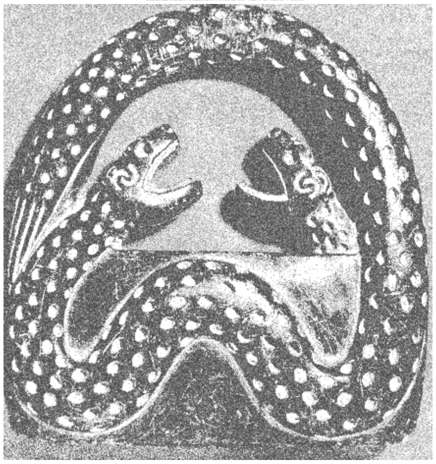
Snakes associated with eagle glyphs are also associated with the zebu bull glyph.



PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Two sides of Tepe Yahya 'weight'(?) fragment apparently reused as door socket during IVB times. One side depicts date palms, and the other has a representation of a humped bull with a scorpion set above its back. (After Fig. 9.11 in Philip H. Kohl, 2001, opcit.)

Humped bull and scorpion design on a plaque or 'weight'(?) from a late Early Dynastic temple context at Agrab (Frankfort 1936; Amiet 1977: 366, fig. 298; Fig. 9.12 in Philip H. Kohl, 2001, opcit.)



Combatant serpents on padlock-shaped 'weight' from Soch River of the Ferghana Valley in Uzbekistan. This unique chlorite find from Central Asia shows the serpents with ears and the oval holes for inlays on their bodies. (Brentjes 1971; After Fig. 9.14 in Philip H. Kohl, 2001, opcit.)

If the pictorial motif connotes na_ga, it may be a grapheme connoting **annaku**, tin. [In Sanskrit, na_ga is associated with the lead ore]. [A T-shaped ingot or clamp of lead was found in a level of the temple courtyard at Tell Rimah dated to the earlier thirteenth century BCE (Oates, D. 1965: 75). Assur has a textual reference to the 'lead courtyard' in the temple of the god Assur; excavation revealed nothing to indicate that it was paved with the metal (CAD, s.v. **aba_ru**; Landsberger 1965: 287 n.12; despite Landsberger's discussion suggesting that AN.NA (annaku) denoted lead rather than tin, Muhly argues convincingly that AN.NA indeed connoted tin. However, Smith (Smith, S. 1922) found lumps of lead, bearing stamped impressions, now invisible, at the Ishtar Temple. AN.NA BABBAR (pesu) is fifteen times more valuable than AN.NA aba_ru; i.e. tin : lead ratio. Perhaps AN.NA BABBAR meant 'good-quality tin'. But then, *annaku* was casiterite, the oxide of tin (cf. Muller 1982: 272).

Cassiterite (leax oxide: SnO_2) is black and could be rebus for a black snake, **na_ga** (Skt.); **anakku** (Akkadian).

While the metals are white, ores tend to be recognized by their colour, particularly in early metallurgical societies.

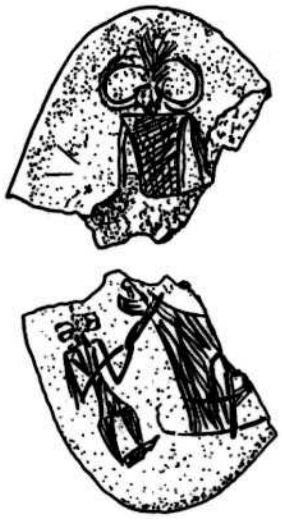
Ore type and colour:

native copper (copper colour)
copper oxide: tenorite CuO (black)
copper oxide: cuprite Cu_2O (red)
copper carbonate: azurite (blue)
copper carbonate: malachite (green)
copper silicate: chrysocolla (kupferpecherz) (Blue)
copper silicates: tennantite, tetrahedrite, enargite, bournonite (Grey)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

copper sulphate: chalcanthite (blue)
Copper sulphide: covellite CuS (blue)
copper sulphide Chalcocite Cu2S (grey)
copper sulphide: bornite CuFeS4 (peacock colour)
copper/arsenic: whitneyite CuAs (reddish-white) [Which is perhaps the most used in Bha_rata to create hardened tools and weapons in SSVC]

copper/arsenic: *domeykite* Cu3As (grey-white)
Copper/arsenic: *algodonite* (grey-white)

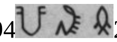
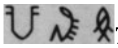


copper/arsenic: pseudomalachite (green)
Pure arsenic *As* (WHITE)
Arsenic oxide : *Arsenolite* As2O3 (grey)
Arsenic sulphides: orpiment As2S3 (yellow); realgar As2S2 (red); arsenopyrite FESAs (white)

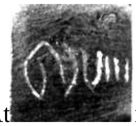
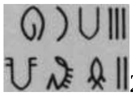
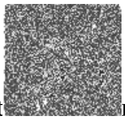
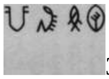
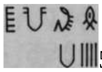
In the old Akkadian period, the ingots of tin are called **s'uqlu** [cf. **s'ukla** 'white' (Skt.)] and weigh about 25 kg. The two ingots found at Haifa weigh about 5 kg. each.

Terracotta cake with incised motif. Horned divinity on one side of the cake and a tied animal on the other side. Kalibangan. Period I c. 2800-2600 BCE. [After Lal, 1979, pl. XII; cf. Fig. 2.26 in: JM Kenoyer, 1998]

A characteristic feature of the epigraphs is the use of glyphs. Since many glyphs most often occupy an entire side of an inscribed object and dominate the field on which epigraphs also occur, the glyphs are interpreted as constituting substantive messages.

Kalibangan100A [The first sign could be 'fish' glyph.] The orthography incised on the potsherd led KB Lal to surmise that the writing was from right to left. The sequence of three signs occurs on over 24 epigraphs; the message is comparable to the epigraphs: m1294  2291 or, Lothal035  7101 or part of copper plate inscription (line 2):

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

m0512Atm0512Bt 2906 or copper tablet (line 1)
m0502Atm0502Bt 3345or miniature tablet:
h853At h853Bt h853Ct 5277

Glyphs and meanings

The use of glyphs to convey messages of import is clearly seen in the boundary stones of Mesopotamia and Elam.

'"The Staff of Nins'ubura'...The scene shows the sun-god as the chief justice of the world. He majestically places his foot on a hill, holding the saw with which he 'cuts decisions' (a translation of the Akkadian phrase for judging)...A godess with hands raised in supplication stands behind the king as a protective figure whose prayer may be directed for the benefit of the seal owner...A goat placed beside a woman, to the right, helps us identify the latter as a godess, inspirer of correct interpretations of omens appearing in sacrifices, who is mentioned in a Babylonian text on constellations, published by Christopher Walker and Hermann Hunger." (Edith Porada, 1995, Understanding Ancient Near Eastern Art: A Personal Account, in: Jack M. Sasson, ed. 1995, *Civilizations of the Ancient Near East*, Vol. IV, New York, Charles Scribner's Sons, pp. 2695-2705.)

gurja = a mace; a club; a battle-axe (Persian.G.lex.)

kuruju = a frame-work of bamboo-slits covered with paper or cloth or leaves, used to put idols in, or by the bride and bridegroom to sit in (Ka.); kuruji, gurji (Tu.)(Ka.lex.) kur-uma_d.u = the gable end of a house (Te.lex.)

kurujute_ne = the most luscious of all kinds of honey, gathered by the smallest of bees (Te.lex.) [Note the framework, it appears like a bee-hive?].

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

gurji = a boundary pillar; gurji tehar.a, a boundary pillar marking the spot where the boundaries of three villages meet (Santali.lex.)

kudurr (boundary stone) marking of Nebuchadnezzar I (1126-1050 BCE), marking the king's land grant to Ritti-Marduk for military service in the inscription (not shown). The symbols appear in six registers. The first register is the eight-pointed star of Ishtar, the crescent of Sin and the sun-disk of Shamash. The second register represents the shrines of Anu, Enlil, and Ea. The third register consists of serpent diases upon which are the **hoe** of Marduk, the **wedge** of Nabu, and an unidentified symbol. The fourth register includes an eagle-headed **scepter**, a double-lion-headed **mace**, a horse's head on a double base with an arch, and a bird on a rod. The firth register shows the goddes Gula seated on a throne, with a dog (her symbol) lying beside her, and a **scorpion-man**, with the legs and feet of a bird, holding a bow and arrow. The last register includes double lightning forks supported by a bull (Adad), a tortoise, a **scorpion**, and a lamp on a pedestal (the symbol of Nusku, the god of light). A snake twists along the side of the kudurr. Ht. 56 cm. London, British Museum (After the notes in: Karen Rhea Nemet-Nejat, 1998, *Daily life in Ancient Mesopotamia*, London, Greenwood Press, p. 262). The 'star' sign denoted AN, sky god and also was the cuneiform sign to represent the word and syllable: AN. Many of these logographs are found among the Harappan glyphs. It is notable that the pictorial motifs are associated with weapons.

Rebus: **kuduru** = a goldsmith’s portable furnace (Te.lex.) *kudru* top of fireplace (Kuwi)(DEDR 1709).

These ligatures and scenes are clear representation of the hieroglyphic nature of the pictorial motifs. It is indeed possible to read the logographs: the lion representing ARA_, a saw; similarly, the griffin and the one-horned bull are representations in logography of lexemes denoting other bronze-age weapons; the exact lexemes will emerge from a study of the homonyms in the ancient Indian Lexicon.

This tradition of logography continues in the Cretan Hieroglyphic script. A single descendant of this script, Linear A, Linear B, and Cypro-Minoan survived in the first millennium on the island of Cyprus and was noted as the Classical Cypriot Syllabary.

Table of Cretan pictographic signs compared with Egyptian hieroglyphs, Phoenician and allied sign lists and classical Greek and allied alphabets (After Fig. 1 in: F. Melian Stawell, 1931, A Clue to the Cretan Scripts, London, G. Bell and Sons Ltd.) Some sound-values in Cretan and in Phoenician seem to correspond.
Some Linear A ideograms, ligatures and fractions (After Fig. 6 in David W. Packard, 1974)

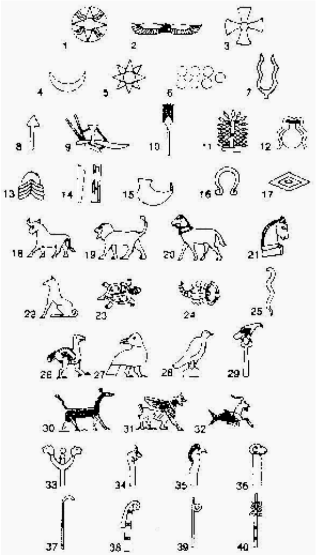
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

"The script begins at the time of the foundation of the first palaces in the MMI period (about 2000 BC) and continues into the early part of MM III (perhaps down to 1650 BC). Since the inscriptions are all extremely short, the prospects for decipherment are discouraging; and there is fundamental disagreement about so basic a question as whether the script is ideographic or phonetic. About two dozen of the Hieroglyphic signs resemble signs occurring later in Linear A and B, and the same sequence of signs occurs both on Hieroglyphic seals and Linear A religious inscriptions. (Tables of parallel signs: Ventris-Chadwick (1956,33), Pope (1968, opcit., 438), Raison-Pope (1971, *Index du lineaire A*. Rome. xiv). It is difficult to see how this could occur if the first script were purely ideographic and the second syllabic. In any case, the obvious ideographic use of four signs to designate agricltural commodities on a Hieroglyphic tablet has an exact paralle in Linear B where these same signs represent wheat, oil, olives and figs.

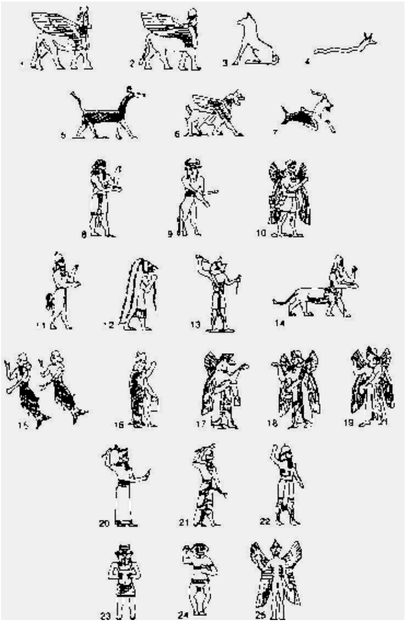
They also occur (in the same order) on several Linear A tablets. (The Hieroglyphic table is P 121; the Linear A is HT 91; cf. HT 14,21,114,116). The second Cretan palace script is Linear A. Despite its obvious resemblance to the earlier script it is not easy to document a natural development from one to the other. Linear A was in use in Phaistos as early as 1850 BC, long before the disappearance of the first script; but the bulk of the surviving texts date from the destruction of the palaces at the end of LM Ib (around 1450 BC) with a smaller number assignable to MM III and none securely dated after 1400 BC...Linear B script was used by the Mycenaean Greeks at Pylos, Mycenae, and Thebes for accounting documents in the Greek language. Its use in Crete is restricted almost entirely to Knossos at the time of the Greek occupation in the LM II period...A theory holds that the Greeks on the mainland had encountered Minoan writing earlier in their trade with Crete and had adapted it to their own language, perhaps already in the Shaft-Grave period." (David W. Packard, 1974, *Minoan Linear A*, Berkeley, Univ. of California Press).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Kudurru recopied under Marduk-apla-iddina I, from Susa, 12th cent. BCE. A godess wearing a tunic with pleats in the back and elbow-length sleeves, a cone-shaped headdress, and quilted slippers. Top register: sun, moon, star, scorpion: In Babylonia, a replica of boundary stone placed in a temple, recording a land grant, usually involving the crown. Land grants were made to crown prince, princess, temple officials and priests, officers and generals, and courtiers. Personal names are accompanied by the phrase, 'his (i.e. the king's) servant'.



Symbols of deities: 1 [Figure 1, Jack M. Sasson (ed.), *Civilizations of the Ancient Near East*, p. 1838]. 1. solar disk: Shamash; 2. winged disk: Shamash, sun-god; 3. cross: Shamash; 4. crescent: Nanna/Sin, moon-god; 5. 8-pointed star usually in disk (Akkadian **kakkabu**): Ishtar; 6. seven dots: Sebittu, the Pleiades; 7. lightning: storm-god, Ishkur in Sumer; 8. triangular-headed spade or hoe (Akkadian **marru**): Marduk; 9. plough: Ningirsu (on Kass kudurrus); 10. barley stalk: Shala, godess; 11. stylized tree: fertility? 12. vase with streams (Akkadian **hegallu**, 'abundance'): water-god Ea or Marduk: 13. horned cap: sky-god Anu; 14. stylus: Nabu, scribal god; 15. lamp: fire-god Nusku; 16. omega: weighing scales or yoke of a chariot pole; Ninkhursag, birth-godess? 17. rhomb or lozenge: grain of corn, Ishtar; 18. bull: storm-god; 19. lion: Ishtar, godess; 20. horse: Shamash; 21. horse head: ? 22. dog, usually sitting: Gula, godess of healing; 23. turtle: Ea, water-god; 24. scorpion: Ishhara, godess; 25. horned snake (Akkadian **bas'mu, nira_hu**): Ishtaran, god; 26. striding brid: Papsukkal, messenger god; 27. bird with back-turned head: Harbe, Kassite god; 28. bird on low perch: Ninurta, war-god. 298. bird on high perch: Shuqamura and Shumalia, twin-gods; 30. (snake-)dragon (Akkadian **mus'hus's'u**): ? 31. lion-dragon (**lion's forelegs, bird's hindlegs and wings** (?Akkadian **u_mu na_'iru**): Ishkur, storm-god or Adad; 32. goat-fish (Akkadian **suhurmas'u_**): Enki/Ea, water-god; 33. double lion-headed scepter: Nergal; 34. lion-headed staff: Nergal; 35. eagle-headed staff: Zababa; 36. ram-headed staff: Ea, water-god; 37. crook: Amurru, god of nomads; 38. ring-post with streamer: Inanna; 39. ring-post without streamer: Enki/Ea, water-god; 40. ring-post: Shamash, sun-god? [Note Symbol 31: the composite animal is a pattern seen on many composite animals of SSVC inscriptions].



Symbols of deities: 2 Principal apotropaic figures (representations of beneficent gods and demons, and natural and fantastic animals). Most were protectors of buildings (e.g. clay images buried in foundations; **apkallus** (Nos. 16-18) lived at a time before the Flood). [Figure 5, Jack M. Sasson (ed.), *Civilizations of the Ancient Near East*, p. 1848]. 1. human-headed winged or wingless bull: **lamassu/s'e_du** (or **aladlammu_**) or kusarrikku, 'bison'; 2. human-headed winged lion: **s'e_du** (or **aladlammu**); 3. dog, sitting or standing: kalbu, 'dog'; 4. horned snake: **bas'mu/us'umgallu**, 'poisonous snake'; 5. (snake-)dragon: mus'hus's'u, 'furious snake'; 6. lion-dragon: **u_mu na_'iru**, 'roaring weather-beast'; 7. goat-fish: suhurmas'u, 'carp-goat'; 8. long-haired 'hero': lahmu,

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

‘hairy’, Enki/Ea, water-god or Marduk; 9. bull-man: **kusarikku**, ‘bison(-man)’, Shamash, sun-god; 10. scorpion-man: **girtablullu**, ‘scorpion-man’; 11. lion-humanoid: **uridimmu**, ‘mad lion’; 12. lion-garbed figure: Latarak; 13. lion-demon: **ugallu**, ‘big weather-beast’; 14. lion-centaur: **urmahlullu**, ‘lion-man’; 15. merman and mermaid: **kulullu**, ‘fish-man; **kuliltu**, ‘fish-woman’; 16. fish-garbed figure: **apkallu**, ‘sage’ (in fish-guise); 17. griffin-demon: **apkallu**, ‘sage’ (in bird-guise); 18. anthropomorphic god with bucket and cone: **apkallu**, ‘sage’ (in human guise); 19. anthropomorphic godess with ring of beads: Narudu or Ishtar; 20. anthropomorphic god with axe and dagger: **Sebittu**, ‘seven gods’; 21. anthropomorphic god with axe and mace: Meslamtaea; 22. smiting-god: Lulal; 23. bowlegged dwarf: Ritual dancer? 24. gigantic monstrous human figure: Khuwawa/Khumbaba, demon; 25. canine/leonine demon: Pazuzu.

Tigris and Euphrates were called **idigna** and **buranun**. Cities: **Nippur, Ur, Kish** are non-Sumerian words. Among other pre-Sumerian words are those for farmer, herdsman, fisherman, plow, metal smith, carpenter, weaver, potter, mason and merchant.

“Perhaps the most striking element in ancient Mesopotamian religious art was the symbol. Generally, its significance was simple and direct. Certain relatively uncomplicated images – such as phenomena in the sky, tools of the land, animals, animal hybrids or animal-headed and other standards – were used as direct substitutes for individual gods and godesses [Anthony Green, Ancient Mesopotamian religious iconography, in: Jack M. Sasson (ed.), *Civilizations of the Ancient Near East*, pp. 1837-1858].

Trade routes going northwest

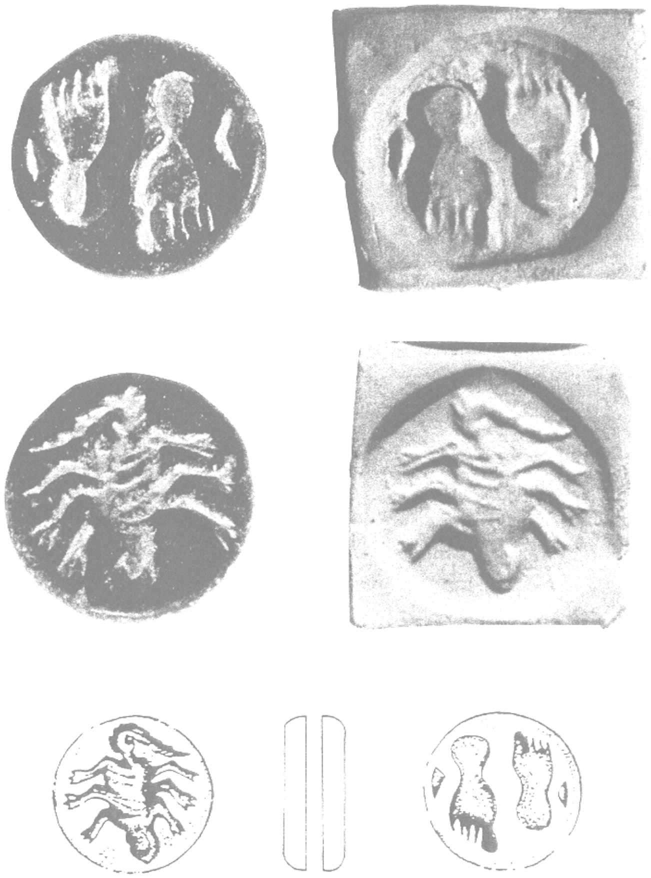
"The Harappan influence observed in southern Turkmenia, however, also indicates trade routes going northwest. It was apparently largely this northern trade of Harappa which led to the rise of Mundigak in southern Afghanistan, which was located advantageously to control the supply of copper and lapis lazui going to the towns of the Indus Valley. The close resemblance bewteen the unpainted pottery of southern Turkmenia, Seistan and southern Afghanistan is no coincidence. In Mundigak, this similarity with the Turkmenian sites extends to metal seals as well as to seals made of stone and baked clay, with their incised designs...The seals are an important pointer where social organization is concerned...Practically all the basic forms and motifs of these seals have their origin in the various magic symbols of the Late Chalcolithic. Seal impressions on clay in the Middle Bronze Age material indicate one of their functions: thus, one clay figurine of a bull had a brand, a symbol of property, incised on its flank. It is well known that livestock played an important part in the development of the institutuion of property; since only two seals were found in the collective tomb mentioned.., it is very likely that the valued property was that of the large clan, not personal property."" (V.M. Masson and V.I. Sarianidi, 1972, *Central Asia: Turkmenia before the Achaemenids*, New York, Praeger Publishers, p. 125, 129; pl. 46 shows the ligatured three-headed animal seal of silver).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Fish and Lizard

Inventory of Hearth and Furnace

The pairing of fish and lizard is to connote possessions or an inventory of a hearth and a furnace.



Tepe Yahya. Six-legged lizard and opposing footprints shown on opposing sides of a double-sided steatite stamp seal perforated along the lateral axis. Lamberg-Karlovsky 1971: fig. 2C

Six legs of a lizard is an enumeration of six 'furnaces'; rebus: **kakra.** 'lizard'; **kan:gra** 'portable furnace'. That an enumeration is intended is seen from the glyph of a pair of soles depicted on the obverse side of the seal from Tepe Yahya:

talka sole of foot; **tala, tola** sole of shoe (Santali) **talka** = palm of the hand, ti talka (Santali.lex.) ti = the hand, arm (Santali.lex.) [A count of 12 phalanges on a palm, constitutes a palm of the hand]. Thus, the rectangle depicts, two talka-s or two palm-counts, i.e. two (san:gad.a) twelves or 24. bar, barea = two (Santali.lex.) ba~r.ia~ = merchant (Santali.lex.)

talika = inventory, a list of articles, number, to count, to number; hor.ko talkhaetkoa = they are counting the people; mi~hu~ merom reak talikako hataoeda = they are taking the number of the cattle (Santali.lex.) The boxed count of 24 (on one side of tablet shown in Slide 205 represents an inventory of san:gha_ta or component articles, represented by the inscription of 4 glyphs: carpenter's axe (badhor. hako), anvil (d.ha~go), furnace (kan.d.a kanka), razor (bakhor.) (an instrument, with which tassar cocoons are cut into narrow strips for splicing purposes; teeth of a comb represented by **E**).

bhed.a hako a species of fish (Santali) **bedha** cross-grained (Santali)

The fish sign incised on an anthropomorph with ram's horns, a copper hoard find, is a phonetic determinant: bhed.a 'ram'
boda, bhed.a = a ram, the male of certain graminivorous animals, as goats, deer; boda jel = a stag; boda merom = a he-goat; bod khasi = a goat not effectually castrated (Santali.lex.) bhe_d.a = sheep; bhaid.aka of sheep (Skt.); bhi_r.o (Phal.)(CDIAL 9604). bhe_d.ra, bhe_n.d.a = ram (Skt.)(CDIAl 9606).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

a~s = scales of fish (Santali); rebus: aya = iron (G.); **ayah**, **ayas** = metal (Skt.) [Assuming that the orthographic emphasis is on the scales of fish. The depiction of a fish glyph on a copper anthropomorph (copper hoard) may thus be: **bed.a ayas** = hearth for metal; rebus: **bhed.a** ‘ram’; **a~s** ‘scales of fish’]

Substantive: **bed.a** either of the sides of a hearth (G.)

m0298 2133

The *bed.a* ‘hearth’ is for melting iron stone sand (*bali*; rebus: *bali* ‘bullock’) and copper ore (*dam.ra* ‘heifer’; *ta_mbra* ‘copper’):

B.

Early Harappan bowl. Fish. [After Fig. 23.35 in, Asko Parpola, New correspondences between Harappan and near Eastern glyptic art, in: in Allchin, ed., *South Asian Archaeology*, 1981, Cambridge].

kakra. lizard (Santali)
kan:gar furnace (K.)

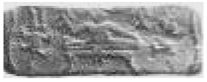
d.okke lizard (Kol.)(DEDR 2977). Thus when a lizard is shown holding a fish in its jaw, the message is: possession, *hako* (glyph: fish, substantive: axe*); ke~r.e* bell-metal, brass; *ken.t.a* fish m0410

Pict-64: Gharial (or lizard) snatching, with its snout, the fin of a fish 2133 Glyph: *kakr.a* ‘common lizard’; *kakr.a hako* a species of fish (Santali)

a~s = scales of fish (Santali); rebus: aya = iron (G.); **ayah**, **ayas** = metal (Skt.); hence, lizard + fish = **kan:gar + a~s** = furnace + metal

Substantive: *kan:gar* furnace; *ken.t.a (ke~r.e~)* bell-metal, brass; hence, lizard snatching fish may be read as a compound term: bell-metal, brass furnace.

A logonym for a *kakr.a* is *khan:gar* ‘dotted circle, hole’ which gets depicted as the eye of ‘fish’ glyphs.



Mohenjo-daro. Sealing. Surrounded by fishes, gharials? (monitor lizards) and snakes, a horned person sits in 'yoga' on a throne with hoofed legs. One side of a triangular terracotta amulet (Md 013); surface find at Mohenjo-daro in 1936. Dept. of Eastern Art, Ashmolean Museum, Oxford.

soksoko, sekeseke, sekseke covered, as the arms with ornaments, full; **seke doke, seke meke** covered with ornaments, as the neck (Santali)

seke seke to rage, fume (Santali)

sekra a Hindu caste who work in brass and bell metal; *sekra sakom* a kind of armlet of bell metal (Santali)

The lizard is: **kudur d.okka**; the rebus: **kuduru** ‘goldsmith’s portable furnace’; **dokr.a** ‘a coin of value of one-fourth of a pice’; **dhokra** ‘a metal worker’.

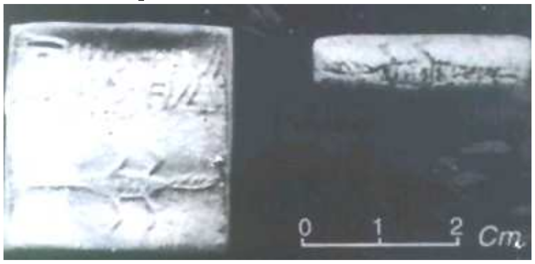
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

kuduru = a goldsmith’s portable furnace (Te.lex.) *kudru* top of fireplace (Kuwi)(DEDR 1709).

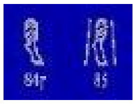
dhokra dom = a section of the semi-hinduised caste of doms; dhokra could connote craftsmen or metal workers (Santali.lex.)

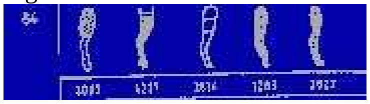
dokr.a = a coin of the value of one fourth of a pice (Santali.lex.)

kudur d.okka = a kind of lizard (Pa.); kudur d.okke, kudur d.ekke = garden lizard; kidri d.okke house lizard (Go.)(DEDR 1712). **d.okke** = lizard (Kol.); d.okka (Pa.); d.okod. (Ga.); dokke garden lizard; d.oke lizard; dokke_ small lizard; pidri_ dokke_ the house-lizard; d.ogga_l chameleon (Go.); d.o_ki lizard (Kond.a); d.oi chameleon (Kui); d.rui’I lizard (Kuwi); droi, d.orgi, d.rogi chameleon; d.ro_gi lizard (Kuwi); tuska (Kur.)(DEDR 2977). [Note the glyphs of what is often called the gharial or alligator; could it be the common house lizard?]



Rakhigarhi: Cylinder Seal (Courtesy ASI)

Sign 84 and 85 and variants of Sign 84 



d.o_n:ga = lower leg (Wot.); **d.on:g**, d.on:, za~_d.o~_ = knee (Ash.); d.udlik = id.; d.un:gurik = elbow (Shum.); d.un:go = knee (Gaw.); d.un:gi_ = elbow (Wot.); d.uin:gya = elbow, ankle-bone (Sv.); d.ho~ga_ = elbow (H.); do_ni = knee (Gypsy)(CDIAL 5605).

t.o~_ka = scorpion; tu_n:ga -= id. (Wg.); t.a~uke (Shum.); t.o~k = beak, point (H.);. t.o~k, t.o~kri_ (M.); t.o~g = point, beak (H.); t.hon:go = peck (S.); t.hu~_gn.a_ go peck (P.)(CDIAL 5478).

d.ho_ki_ = agapa, abaka, a ladle, spoon (Te.lex.)

d.ok. d.oki_, d.okum = the neck; d.oka_vavum = to poke the head forward; d.okiyum = looking at by raising the head (G.lex.) d.oi_ = head (H.M.); d.oke~ = head (M.); d.ok kor.ik = to take someone on one’s back (Kho.)(CDIAL 5566)

d.hon:ga = a dugout, a boat made from a hollowed tree, a wooden trough (Santali.lex.)

t.okn.a_ = to hinder (P.); t.oka_ = to thwart (B.)(CDIAL 5476)

d.okke = the body (Ka.); dokke (Tu.); d.okka skeleton, belly (Te.); d.okka bone (Nk.); ciparta d.okka rib (Nk.); d.okka belly (Go.); nenja-d.aki chest (Pe.); d.aki breastbone, chest (Kui); do_kku_ skeleton (Kuwi)(DEDR 2976).

d.on:ka footpath (Te.); d.on:g way, road (Nk.); it.an:kar narrow path (Ta.)(DEDR 2981).

d.haukana = a present (Skt.); d.ho_a_ a present (of fruits etc.)(P.); d.howa_ (Aw.)(CDIAL 5609).

d.hok = obeisance (Ku.); d.hok (N.H.); d.hoka (OMarw.); d.hoknu = to bow down before, salute respectfully (N.); dhokna_ = to bow down before (H.); dhok = obeisance (H.)(CDIAL 5611). Cf. d.okum = the head (G.lex.) **doggalu** = kneeling; doggu adj. kneeling; doggu sala_m saluting on one’s knees; submission; dogguni to kneel (Tu.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

d.on:ku, d.on:ka = to bend, to be crooked (Ka.); the state of being bent, curved (Ka.)

d.on:kan.i, d.on:kal.i, d.hon:kan.i = a spear, a lance (Ka.); **don:kane** (Te.)

d.on:gara, don:gara = a steep rock; a precipice (Ka.); d.o_n:gara = a hill (M.) do_ra = a heap, pile, stack (Te.)

d.okkara, d.okkal.a, d.okkara, d.hokkara = thumping, striking; a blow, a cuff (Ka.); t.ho_kara thmping, striking against (H.M.)

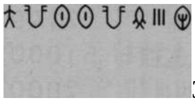
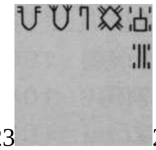
d.oke, doge = to make a hole, to excavate a hole (with the hand, a crow, the nails or claws etc.)(Ka.); do_ku (Te.); d.ogar-u, do_r-u, dogar-u, do_r-u. = a hollow, a hole in a wall, in a tree, in the ground etc. (Ka.); d.on:gu id. (Te.Ta.); d.ogar-u bi_r-u = a hole to be formed (Ka.); d.ok pp of d.oge, in: d.okkol.l.u (Ka.) da_ra = hole, rent, cleft (Ta_n.d.yaBr.); da_ri_ (Sus.r.); da_ru = fissure, cleft (S.)(CDIAL 6292). dara = piece; daram = a little (Skt.Pkt.); a half (Pkt.); dara = a little, partially (common in cmpds.) (Or.)(CDIAL 6187). dara = hole in the ground, cave (R.); dar = cave (K.); cave, hole, hollow in ground (B.); hole, burrow (G.); hole for putting a tree or stake in (M.); dara = cave, chasm (Si.); d.aro = hole in ground to fix anything in (S.); daro = hole, crack (Ku.); deri = hole (D.); d.ari = hole, den, burrow (of wild animal or reptile (S.); dari – hole, cave (B.)(CDIAL 6188).

d.o_ki, d.ho_ki_ = ladle, abaka, agapa (Telex.)

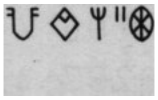
kakr.a = the common lizard; dhiri kakr.a, arak kakr.a, d.hibri kakr.a, species of lizards (Santali.lex.)

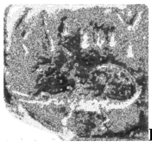
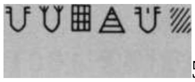
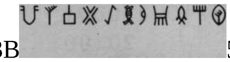
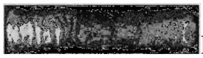
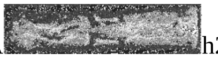
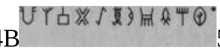
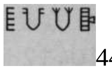
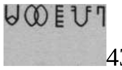
gr.hago_laka = house lizard (Ma_rkP.); gharago_li_, gharo_li_, gharo_liya_ (Pkt.); **gharol.i**, ghar.oli_ (G.)(CDIAL 4431). **gha~t.** = protuberance on snout of crocodile (A.)(CDIAL 4420). Ghar.ya_lu long-snouted porpose (SS.); ghar.iya_l crocodile (N.); gha~r.iya_l alligator (A.B.); ghar.ia_l.a (Or.); ghar.ya_l, gharia_r (H.)(CDIAL 4422). [The semant. of lizard X alligator are so close that it is difficult to identify if the orthography on many seals and tablets relates to a lizard or a crocodile; the presence of a remarkable lizard made of stone at Dholavira points to the possibility of recognizing **kakr.a** (lizard) as the rebus **kakar.,** Pilcu har.am, the first man of the Santal tradition]. Cf. **khe~kad.** crayfish, crab (M.)(CDIAL 2816). Karkara = stone (Skt.); kakkara stone, pebble (Pkt.); ka~_kro pebble (G.)(CDIAL 2820). A homonym is: kakkat.a = a large deer (Pali)(CDIAL 2585).

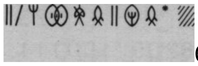
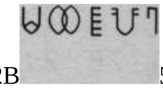
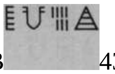
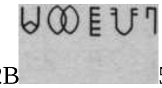
On epigraphs m0410 and m1429, the scale of fish is orthographically ligatured to the snout of a crocodile. If crocodile is: **it.an:kar** (Ta.), the scale of fish is **a~s** (Santali). The rebus lexemes are: d.han:gar 'smith' + ayas 'metal', i.e. metal-smith.

m0410 2133Pict-64: Gharial snatching, with its snout, the fin of a fish. m1429Ct 3246 Gharial holding a fish in its jaws m12232045 m1429At m1429Bt Pict-125: Boat.. m0482At m0482Bt 1620 Pict-65: Gharial, sometimes with a fish held in its jaw and/or surrounded by a school of fish.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Kalibangan078A Kalibangan078B 
8104 [Tablet in bas-relief; on one side, lizard (gharial?) holds a fish]

m0292 Gharial (or lizard) 1361 h599A h599D
5076
h283A h283B5253
h284Ah284B5229
h287A h287B 4430
h705At h705Bt4337

Chanhudaro Pict-67: Gharial (or lizard), sometimes with a fish held in its jaw and/or surrounded by a school of fish. Chanhudaro. Tablet. Obverse and reverse. Alligator and Fish. Fig. 33 and 33a. of Plate LII. After Mackay, 1943. 6233
h172B5305 h173A h173B
4333 h174A h174B4338
h172A h172B5305 Pict-66: Gharial (or lizard), sometimes with a fish held in its jaw and/or surrounded by a school of fish.

Glyph: *kakkare* partridge (Kol.); *ka_kral* id. (Pa.); *kakra_nj, kakranj* id. (Go.); *karkara* a gallinaceious bird (Skt.); *kakkara* jungle cock (Pali)(DEDR 1078).

Stone Lizard (not a gharial)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Dholavira. Stone sculpture of monitor lizard. Stone sculpture of monitor lizard is a pointer to the identification of the commonly-occurring glyph as a lizard (and NOT an alligator or gharial). http://asi.nic.in/vsasi/album_dholavira8.html

That it is a lizard and not a gharial (alligator) is surmised from the find of a monitor lizard in the round, made of stone and discovered at Dholavira, a site which has some remarkable workings in stone including stone-cut reservoirs and stone drains.

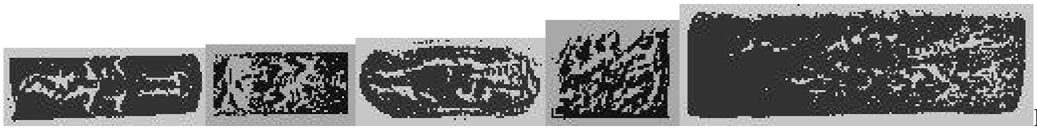
Substantive: **ka_~guru**, ka~_gar portable brazier (K.); ka~_gri_ small portable brazier (H.)(CDIAL 3006).

Glyph: **kakr.a** = the common lizard; dhiri kakr.a, arak kakr.a, d.hibri kakr.a, species of lizards (Santali.lex.)
Substantive: *ka_karn.i_* a file for blacksmiths (used in Surat.h); *kakra_vavum* to sharpen with a file (of the teeth of a saw); *kakarum* adj. rough; not smooth; *karkarum* adj. rough; sharp (G.)

Substantive: *kakar*. 'another name for Pilcu har.am, the first man according to Santal tradition (Santali)

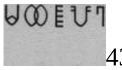
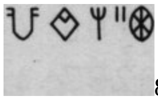
Sumerian cylinder seal impression from Tell Asmar; the animals are: rhinoceros, elephant and alligator (or, lizard); glazed steatite, height 3.4 cm.; cylinder seal rolled over wet clay. (After Frankfort, 'The Indian Civilization and the near East', *Annual Bibliography of Indian Archaeology*, 1932, p.3, Pl. I and Heras, 1953, p. 219; Tell Asmar (Eshnunna), Iraq. IM 14674; glazed steatite; Frankfort, 1955, No. 642; Collon, 1987, Fig. 610.)

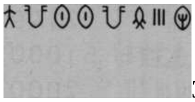
hako it.an:kar = fish, alligator; i.e. axe, blacksmith. The alligator, **it.an:kar** could be a pictorial motif equivalent of a bull, **d.an:gar**.



Pictorial motifs 63 to 67 (Gharial sometimes with a fish held in its jaw or surrounded by a school of fish)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

h705At h705Bt 4337 (Tablet in bas-relief) Kalibangan078A Kalibangan078B 8104 (Tablet in bas-relief; on one side, gharial holds a fish)

m1429At m1429Bt Pict-125: Boat. m1429Ct 3246 Gharial holding a fish in its jaws: side cof a prism tablet in bas-relief)

Ib is the name of a railway station, a place near Jharsaguda on the railwayline between Kolkata and Nagpur. Lohardaga is the name of a place in Bha_rata associated with Mun.d.a community, a place where minerals are found. > How to explain > > the suffix -daga in the place name? The word is a compound: loha + d.a_n:ga_ (n:g= velar nasal; d. = alveolar). There are many place namees in Eastern Bha_rata with the ending –d.a_n:ga_ in Bengali, and Bihari languages. Some place names with lohar-: loharwala, Punjab, Pakistan; Loharwala, Rajasthan, India, Lohari Ragho, Haryana, India, Loharia, Rajasthan, India; Lohariana, Madagascar; Loharkhola, Lohachala, Dhaka, Bangladesh; Lohara, Madhya Pradesh, India

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

This resolves two major issues. We seem to have just cracked the code of the trough and bull pictorials on inscribed objects of the Civilization!

d.an:gar = a blacksmith.

4064.Blacksmith: t.ha_kur blacksmith (Mth.)(CDIAL 5488). d.a_n.ro term of contempt for a blacksmith (N.); d.a_n.re large and lazy (N.); d.an.ura living alone without wife or children (A.); d.a~_gar, d.a~_gra_ starving (H.); d.an.or unwell (Ash.); dan:gor lazy (Bashg.); d.angur (dat. d.anguras) fool (K.); d.a~_go lean (of oxen) (Ku.); d.a~_go male (of animals); d.a_n. wicked (A.); d.a_n:ga one who is reduced to a skeleton (Or.); d.i~glo lean, emaciated (Ku.); d.i~go, d.in.o abusive word for a cow (N.); d.in:gar contemptuous term for an inhabitant of the Tarai (N.); d.in:gara rogue (Or.); d.hagga_ small weak ox (L.); d.han:garu, d.hin:garu lean emaciated beast (S.)(CDIAL 5524). A tribe: d.ha~_gar., dha~_gar a non-Aryan tribe in the Vindhyas, digger of wells and tanks (H.); dhan:gar herdsman (H.); d.ha_n:gar. herdsman, name of a Santal tribe, young servant (Or.); dha_n:gar.a_ unmarried youth (Or.); dha~_gad. rude, loutish (M.); f. hoyden (M.)(CDIAL 5524).

And, surprise, surprise! **d.han:gar** = bull, ox; the clear reference to the pictograph of a short-horned bull in front of the trough. d.an:gra = an ox, a bullock; mun.d.ra d.an:gra = a polled ox; a tiger; ran:gia d.an:gra = a red ox; fire; a tiger; d.an:gri = cattle in general, a cow (Santali.lex.)

it.an:kar = a type of crocodile (kur-in~ci); crocodile (Ta.lex.)

it.an:karam = menses of women (Ta.lex.) [Note the glyph of a woman with spread thighs].

d.an:gara, d.an:gura public notice by a crier who beats a tom-tom (Ka.); d.a_n:gora_ (M.); d.angura (Te.); tan.d.ora (Ta.); d.avan.di_ (M.)(Ka.lex.) **it.an:ka_ram** = left-hand side of a double drum (Ta.lex.) [Note a drummer glyph]

Yet another re-affirmation: **d.a_n:gra_** = a wooden trough just enough to feed one animal. cf. **id.ankar..i** = a measure of capacity, 20 id.an:kar...i make a par-r-a (Ma.lex.) d.aNga_ = small country boat, dug-out canoe (Or.); d.o~ga_ trough, canoe, ladle (H.)(CDIAL 5568). d.hakkai = shuts (Pkt.); d.hakan.u to cover (S.); d.hakna_ cover of a grain-pot (Bi.); d.ha_ka_ large open basket (N.); **d.ha_kar** = a kind of large basket (N.)(CDIAL 5574). **da_gara** = a large flat basket woven of thin bamboo strips in which articles are fried or exposed to the sun; **d.a_gara, d.a_gara_** = a large winnowing basket; a large shallow, square tray of bamboo splints (Te.)

Thus, it is possible to decode the ‘trough’ as a rebus representation of the word, d.a_n:gra_ (trough) which also means ‘blacksmith or metalsmith’. When the trough occurs with the tiger, the total pictorial motif of tiger + trough may be read as: axe (**kr.a_n.d.i** ‘tiger’, ‘axe’)-(metal)smith; alternative: **kol** ‘metal’ (rebus: kul ‘tiger’) + **d.a_n:gra_** (smith)..

kamba = a post, pillar (Ka.Te.Tu.Ta.Ma.); sthambha (Skt.)

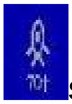
kamat.amu = a portable furnace for melting precious metals (Te.)

tagara = tavara Tbh. of tamara or trapu = tin (Ka.Te.Ta.Ma.) takaram = tin, white lead (Ta.); tagarm (obl. tagart-) tin (Ko.); tamaru, tamara, tavara id. (Tu.); tagaramu, tamaramu, tavaramu id. (Te.); t.agromi tin metal, alloy (Kuwi); tamara id. (Skt.)(DEDR 3001).

Glyph of **trefoil** or three dotted circles: **tebr.a** ‘three’ + **t.a_~ko**, **t.a_ka**, **d.a_ga** ‘dotted circle’; rebus: tamb(ra) ‘copper’ + **d.han:gar** ‘smith’; alt. **t.an:ka** ‘mint, gold’. **t.hakkura** = idol, deity, title (Skt.); Rajput, chief man of a village (Pkt.); t.ha_kor = god, idol (G.)(CDIAL 5488).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Dotted circle is read as syllable **t.ha** in Brahmi script. **This glyph and corresponding phoneme provides a basis for a hypothesis that the hieroglyphic script of Sarasvati civilization evolved into a syllabic Brahmi script. It is notable that Brahmi is another name for Sarasvati.**


Sign 70 Another glyph (inverted) which may so relate the hieroglyphs with a syllable in Brahmi is **ma-**
35

All the orthographic contexts in which the dotted circle and the trefoil motifs are inscribed can be explained with reference to the sememe: **d.a_~ga (r)** [**d.a_ga** 'a mark put on cattle with red-hot iron'] [Semantics: bull, thigh/leg of a seated woman (**kola** 'woman'; rebus: **kol** 'metal'), idol (**t.hakkura**), head-man, smith (**d.han:gar**), eye of ram (dotted circle: **me~t** 'eye' + **t.agar** 'ram' = **me~r.he~t** 'iron' + **tagar** 'tin'), eye of fish (dotted circle: **a~s** 'scale of fish'+ **d.han:gar** = rebus ayas + d.han:gar = metal smith), dotted circle on a portable (gold) furnace]

Hence, the ligaturing of 'dotted circle' glyph on: the hip of a bull, on the shawl of a statuette of a person (head-man), on the hip/leg of a seated woman. Hence, the ligaturing of 'trefoil' on the back of a bull, on the shawl of a statuette of a head-man statuette, on a pedestal to install s'iva lin:ga.

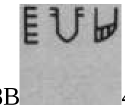
t.agaru, tagaru, tagar, t.agara, t.egaru = a ram (Ka.Te.); tagara, tan:gad.i_ (M.H.); tagade_ra, tagate_ra = having a ram for his vehicle, fire; tagarven.agisu = to cause rams to fight (Ka.) takar = sheep, ram, goat, male of certain other animals (ya_l.i, elephant, shark)(Ta.); takaran- huge,powerful as a man, bear (Ma.); tagaru, t.agaru ram (Tu.); tagaramu, tagaru id. (Te.); tagar id. (M.)(DEDR 3000).

t.agara = squinting (Skt.); **t.agra_** cross-eyed (H.)(CDIAL 5425).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

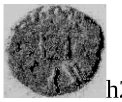
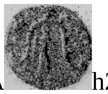
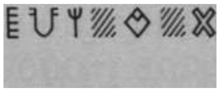
Standing person glyph[36]

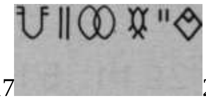
One or more of the ligaturing elements which occur on glyphs showing horned persons: curved horns (like a ram's or like a buffalo's, sometimes with a pair of stars flanking the horns), twig or sprig adoring the headdress, plaited pigtails.

h178B4318 Pict-84: Person ligatured to the back of a bovine with tail, wearing a diadem or tall head-dress (with twig?) standing within an arch or two pillars?

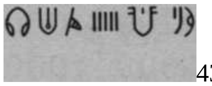
mandil, mandir = temple (Santali) ma_d.a = shrine of a demon (Tu.); ma_d.ia = house (Pkt.); ma_l.a a sort of pavilion (Pali); ma_l.ikai = temple (Ta.)(DEDR 4796). **ma_d.a** = pavilion (Te.)

man.d.a_ = workshop (Kon.)

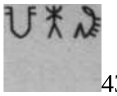
h238A h242Ah242B Pict-84 

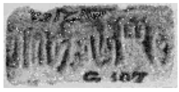
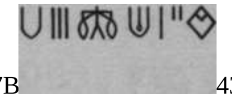
43172863 h363A h363B h363C

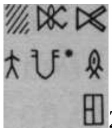
h363E Pict-86 Pict-85 Standing person with horns and bovine features (hoofed legs and/or tail).

5471 h175A h175B Pict-87 4319 Standing person with horns and bovine features (hoofed legs and/or tail).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

h179A h179B 4307 Pict-83: Person wearing a diadem or tall head-dress standing within an ornamented arch; there are two stars on either side, at the bottom of the arch.

 h177A h177B4316 Pict-115: From R.—a person standing under an ornamental arch; a kneeling adorant; a ram with long curving horns.

m1186Acolour 2430

There are some tablets where the standing person wearing a twig as headdress is within an ornamented arch decorated with *ficus religiosa* leaves (as in tablets: h238A, h242B, Pict-84 shown together with Text 4317, m1186 and h177B); *loa* '*ficus religiosa* ' is rebus for: *loh* '(iron) metal'.

The twig or tree branch or feather(s) ligatured to the head of the composite motif may connote a possession of a blacksmith or coppersmith.

H178B tablet with epigraph shows a person ligatured to the back of a bovine; the person also wears a twig as a head-dress.

Glyph: back of a bovine

Substantive: **d.ha~_gar., dha~_gar** blacksmith; digger of wells (H.)

d.hagara_m pl. the buttocks; the hips (G.lex.) [Note the glyphs ligaturing other glyphs such as a man's body to the buttocks or hips of a bull]. d.aka_ waist (Wg.); da~k, d.an: back (Dm.); d.a~g (Shum.); dha~_k back (Kal.); d(h)a_k back (Bshk.); d.ha_k hip (L.); d.ha_ka (S.); side, hip (P.)(CDIAL 5582). t.an:ke, t.an:ka_ = the leg (Ka.) t.an:ka = leg (Skt.); t.an:g projecting spike which acts as a bolt at one corner of a door (K.); t.a_n:o rod, fishing rod (N.); t.a~_k iron pin, rivet (H.); t.am.ka leg (Pkt.); t.a_n:ka leg, thigh; t.a_n:ku thigh, buttock (Or.); t.a~_n:, ten:ri leg, thigh (B.); t.a~_g, t.a~gri leg, foot (Mth.); t.a_n:, t.an:ari leg (Bhoj.); t.a~_g (Aw.H.M.leg from hip to foot (G.)(CDIAL 5428) [Note the dotted circles inscribed on the leg from hip to foot of a seated woman].

The ligatured glyph (of horns + back of bull) could also denote **pot** 'bead' **kod.** 'workshop':

pot = glass bead (P.B.H.G.M.); **puti** = necklace of glass beads (Pkt.)

Thus, the dotted circles shown on the standard device could also depict a bead furnace. **pot + san:gad.a**

Upper part of back**pot.** upper part of back; pottel back; adv. behind (Pa.); pot., pot.tel, pot.t.u back (Ga.)(DEDR 4514). 6933. Image: hindquarter of an animal: puta buttock (Ka.Skt.)(Ka.lex.) pu_t.h back (also used in counting cattle, e.g., ca_r pu_t.h goru four oxen (Ku.); buttock (H.)(CDIAL 8371). put.tha

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

the buttock, the hip of an animal (P.lex.) **put.hiya** = the hips (G.) put.ha, pu_t.h = the back (G.) put.am = puram = the back; backside (Ta.) pu_ta = buttocks (Skt.); po_t.i_ = rectum (Pa_n.); pou = the hinder part (S.); puttara = vulva (Pkt.); pu~_tu = part of the body behind the pudenda (K.); puti_ = vulva (Ku.); phuti_, phuddi_ = vulva of small girl (Ku.); puti = vulva; putu = vulva of young woman (N.); po_ri_ = tail (Gy.); pot.h = rectum (K.); pu_t.ki = anus (B.); pu_t. = sacrum bone of a cow (H.)(CDIAL 8321). pe_n.d.a_ female organ; pe_nd.a (Go.); pind.ari rectum (Kui); pend.a buttock (Pa.)(DEDR 4398) pande, pan.d.e = the region over the symphysis pubis; penda = the bottom, base, foot, an underpart (Santali.lex.)). puccha = tail, hinder part (AV); tail (Pali.Pkt.); puchr.u~ = tail (G.)(CDIAL 8249). puccha [put-cha 'putam gudam (yonim va_) cha_dayati_ti' cf. putau = buttocks, Hindi pud.a_] tail, hinder part (AV 9.4.13)(Vedic.lex.) Put.t.ha = the buttock, the hip of an animal (P. lex.) puccha = the hinder part; the end of anything (Ka.) puchd.i_, puchd.um = a tail (G.)

Glyph: small branches of a tree; twig, sprig, tree

Substantives: *aduru* 'native metal'; **cul.l.ai** = kiln, furnace; rebus: **cul.l.i** = sprig, branch

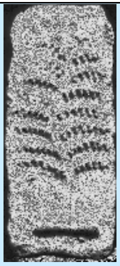
*ad.rna_* to twist back one's limbs or bend the body inward (as under threat of a blow)(Kur.); *ad.re* to strut; *ad.ro* a swaggerer (Malt.)(DEDR 108). [cf. the glyphs of antelope and tiger with their heads turned backwards.]

ad.aru twig; ad.iri small and thin branch of a tree*; ad.ari* small branches (Ka.); *ad.aru* twig (Tu.)(DEDR 67). Cf. **at.artti** = thickly grown as with bushes and branches (Ta.) *d.ar a* branch; *dare* a tree; a plant; to grow well; ban: *darelena* it did not grow well; *toa dare* mother, the support of life (Santali)

Thus, the glyph of a standing person with other glyptic features of the back of a bovine, twig and ficus-leaved-arch can be explained as: *d.ha~gar* 'smith'; *aduru* 'native metal'; *loh* 'iron'; that is, a blacksmith working with iron and native metal (maybe, natural copper + arsenic alloy).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Tree glyph



Molded terracotta tablet showing a tree with branches; the stem emanates from a platform (ingot?). Harappa. (After JM Kenoyer/Courtesy Dept. of Archaeology and Museums, Govt. of Pakistan).

kut.i, kut.am = tree; rebus: **kut.hi** = furnace

man.d.a_ = warehouse, workshop (Kon.lex.) *man.n.u* to do, perform, adorn, decorate, polish (Ta.); *man.ai* to create, fashion (Ta.); *manayuka*, *maniyuka* to fashion, form earthenware, make as a potter (Ma.)(DEDR 4685). *man.i* jewel of office (Skt.); *man.iyam* office of the village headman (Ta.); superintendence of temples, palaces, villages (Ma.); *man.e.v*, *man.ye.v* the office of monegar (Ko.); *man.iya*, *man.iha*, *man.eya*, *man.e* superintendence of temples, maths, palaces, custom-houses (Ka.); *man.iga_re* revenue inspector (Tu.); *man.iyamu* office or duties of the manager of a temple (Te.)(DEDR 4674).

Glyph: platform: *man.d.hwa, man.d.ua, man.d.wa* ‘a temporary shed or booth erected on the occasion of a marriage’; *man.d.om* ‘a raised platform or scaffold’; *ma~r.om* ‘a platform, used to keep straw on, or from which to watch crops’ (Santali) *man.ai* low wooden seat, low earthen dais, wooden base of cutting instyruments, footstool (Ta.); *man.i*, *man.e* stool, low bench, seat (Ka.); *man.e* low stool to sit upon (Tu.)(DEDR 4675).

Slide 205 (harappa.com) Faience tablet or standard. This unique mold-made faience tablet or standard (H2000-4483/2342-01) was found in the eroded levels west of the tablet workshop in Trench 54. On one side is a short inscription under a rectangular box filled with 24 dots (or one pairs of 12 dots). The reverse has a narrative scene with two bulls fighting under a thorny tree.

On one side of the tablet is depicted a pair of butting (or fighting, dan:ga) bulls, d.an:gra (blacksmith) [**d.an:gra** janum = prickly plant bare of leaves depicted as a phonetic determinant; janum is a thorn, thorny tree or bush]. He is also a san:gatara_su stone-cutter; san:gad.i = pair. Often, the bull is shown feeding from a trough (again, a phonetic determinant): **d.a_n:gra** = wooden trough or manger sufficient to feed one animal. Thus, when a bull with a trough is shown, the substantive is d.an:gra, blacksmith. A synonym is a tree bare of leaves, d.an:gra. When two butting bulls are shown, he is a d.an:gra (blacksmith) who is also a san:gatara_su, stone-cutter.

d.an:gra janum = a rather uncommon plant, one of the very few prickly thistles found in Santalia, *echinops echinatus*, D.C. (Santali.lex.) d.ha_kal. = bare of leaves (M.) d.hen.d.ra = bare as a tree; having think scanty hair (Santali.lex.)

Substantive: **dha~gar** ‘blacksmith’

Glyph: *sal* a gregarious forest tree, *shorea robusta*; *kambra* a kind of tree (Santali)

Substantive: *sal* workshop (Santali)

The bulls standing face to face: **samna samni** = face to face (Santali); rebus: **samanom** 'gold' (Santali) **homa** = bison (Pengo); rebus: **soma** = electrum (RV)

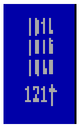
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

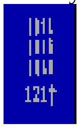
kut.i, kut.am = tree; rebus: **kut.hi** = furnace

Thus the glyphs of one side of the tablet connote: gold furnace.

baddi_ = ox (Nahali); **bad.hi** = worker in wood and metal (Santali)

Glyph: *sal* a gregarious forest tree, *shorea robusta*; *kambra* a kind of tree (Santali)
Substantive: *sal* shop as in workshop, place; *kamar sal* 'smithy' (Santali) *sa_l* workshop (B.)

Twenty-four dots may be a grapheme analogous to the duplicated glyphs of twelve short linear strokes. 

 **bed.a** = twelve (pies)(Te.); **san:gad.a** = pair; rebus: **bed.a** 'hearth', **san:gad.a** 'furnace.

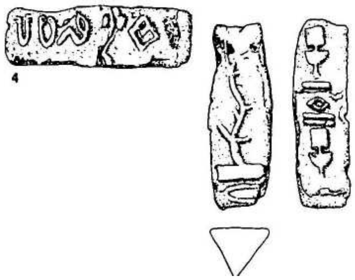
The dots within a square on one side of the tablet may connote (copper) ingots or a storied house:

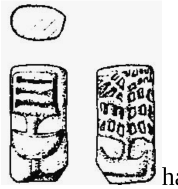
Glyph: *kot.ha* a division, as a stripe or spot, the several parts of a pattern, in patterns; *kabra kot.ha* speckled, spotted; *kot.ha kot.hage neloka* it is in patterns (Santali)
kot.ha an upper story, a ceiling; *kot.ha or.ak* a house with an upper story, or a house with a ceiling (Santali)

kanda kondo 'with lumps'; rebus: *kan.d.* 'furnace'
Glyph: square '*khon.d.'* (Santali)

Substantive: *gan.d.a* pit (furnace); *garn.d.a_lu* a stalwart man, giant (Kod.)

Glyph: *ad.ar* attack (Ka.)
Substantive: *aduru* 'native metal' (Santali)



8.04 Moulded tablet 3 sides  har612 faience tablet, bas-relief.

Tree in front. Fish in front of and above a one-horned bull. Cylinder seal impression (IM 8028), Ur, Mesopotamia. White shell. 1.7 cm. High, dia. 0.9 cm. [Cf. T.C. Mitchell, 1986, Indus and Gulf type seals from Ur in: Shaikha Haya Ali Al Khalifa and Michael Rice, 1986, *Bahrain through the ages: the archaeology*, London: 280-1, no.8 and fig. 112]. "No.7...A bull, unhumped, of the so-called 'unicorn' type, raises his head towards a simplified version of a tree, and two uncertain objects, one a sort of trefoil, are shown above his back. Under his head is an unmistakable character of the Indus script, the 'fish' with cross-hatchings..." (C.J. Gadd, Seals of Ancient

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Indian Style Found at Ur', in: G.L. Possehl, ed., 1979, *Ancient Cities of the Indus*, Delhi, Vikas Publishing House, p. 117). The ‘uncertain’ glyphs above the back of the bull may be: fish + **Y**

The glyph Y is like a fork on Sign 161

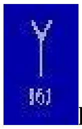
Sign 161 Fork

bara_s carpenter's forked instrument (Tu.lex.)

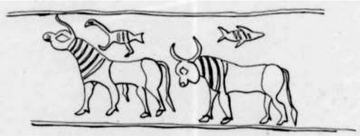
barca the iron part of a spear (Mu.); cf. **barcha_** (Oraon.); **barca** (Sadani.); **barci** (M.); **barca** the spear-head when the shaft is of wood, and the whole spear, when the shaft and point are one single piece of iron, in which case the cmpd. **mer.edbarca** is used (cf. Pl. IV.A.)(Mu.lex.) [Perh. metath. **barca = pra_sa**].

7373a.**Axe**: **paras’u** axe (RV.); **parasu** axe (Pali.Pkt.); **parsa_** hatchet; **parsiya_** reaping hook (H.); **porova** axe (Si.); **furo_** (Md.); **pharasu** axe ((Pali.Pkt.); **phars** (Ku.); **pharsa_** long-handled battle-axe (N.); **pharsa_** axe (B.H.); **phars'i_** (G.); **pharas** battle-axe (M.); **phars'i_** battle-axe, large chisel (M.)(CDIAL 7799h). **pars'u** axe (R.); **pam.su** axe (Pkt.); **po_s** (Ash.); **pec** large axe (Kt.); **pec, poc** (Bashg.); **pa_u~si** vegetable chopper (Or.); **pihiyal, pihiye, pi_haya** knife, chopper (Si.); **pa_so** head of iron instrument such as axe or spade (N.)(CDIAL 7947). **pars'vadha** axe (Skt.); **paras'vadha** (MBh.); **paras'u-dhara** Gan.e_s'a, **Paras'ura_ma**, a soldier armed with an axe; **paras'u, parasu** an axe, a hatchet (Ka.lex.) pharsa_ = hatchet

pharha_ = spearhead; phal = blade, arrowhead



kan.t.a = a fork, grapnel (Santali.lex.)



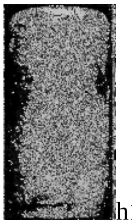
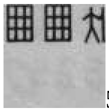
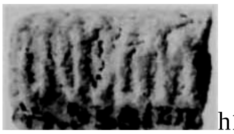
A fish in front of and over a short-horned bull and a bird over a one-horned bull; cylinder seal impression (IM 87798), Tell as-Sulema (2: 662/236) in Mesopotamia, level IV (Akkadian to early Old Babylonian). Gypsum. 2.6 cm. Long 1.6 cm. Dia. [Drawing by Larnia Al-Gailani Werr. Cf. Dominique Collon 1987, *First impressions: cylinder seals in the ancient Near East*, London: 143, no. 609]

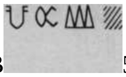
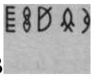
bat.a = a quail, or snipe, coturuix coturnix cot; bon.d.e bat.a = a large quail; dak bat.a = the painted stripe, rostraluta benghalensis bengh; gun.d.ri bat.a = a small type, coloured like a gun.d.ri (quail); ku~k bat.a = a medium-sized type; khed.ra bat.a = the smallest of all; lan.d.ha bat.a = a small type (Santali.lex.) **bat.ai**, (Nag.); bat.er (Has.); [H. bat.ai or bat.er perdix olivacea; Sad. bat.ai] coturnix coromandelica, the black-breasted or rain-quail; two other kinds of quail are called respectigely: hur.in bat.ai and gerea bat.ai (Mundari.lex.) vartaka = a duck (Skt.) batak = a duck (G.lex.) vartika_ = quail (RV.); wuwrc partridge (Ash.); barti = quail, partridge (Kho.); vat.t.aka_ quail (Pali); vat.t.aya (Pkt.); bat.t.ai (N.)(CDIAL 11361). **varta** = *circular object; *turning round (Skt.); vat.u = twist (S.)(CDIAL 11346) bat.er = quail (Ku.B.); bat.ara, batara = the grey quail (Or.)(CDIAL 11350).

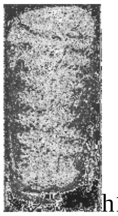
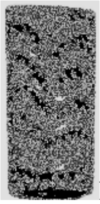
bat.a; rebus, **bat.a** ‘iron’

a~s = scales of fish (Santali); rebus: aya = iron (G.); **ayah**, **ayas** = metal (Skt.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

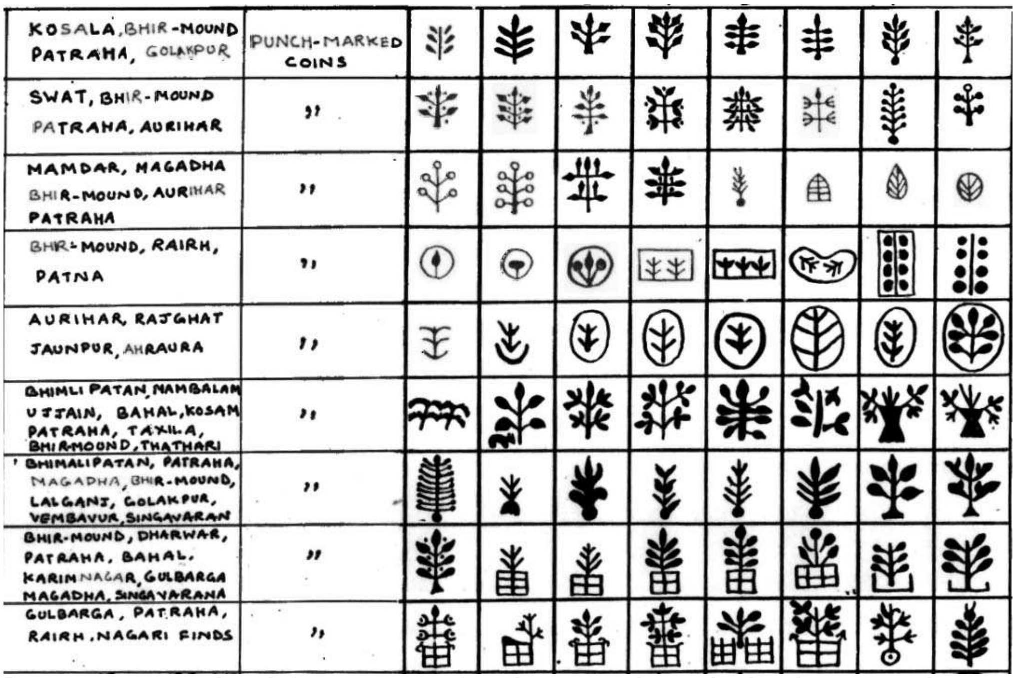
h185A h185B 5279 h193A

h193B 5332 h183A h183B 

4327 h184A h184B h723At h723Bt [Glyph: *bala* 'bangle'; Substantive: *bal* 'iron ore'; Glyph: *dohra* 'two', Substantive: *doht.a* 'house'*; kan.d.* 'rim of pot'; *kan.d.* 'furnace'] m1370a 2509 Cylinder seal; tree branch

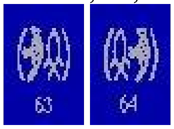
h845At h845Bt h845Ct [Substantive: *dar* 'a trench'; Glyph: *dare* 'a tree' (Santali)] **d.ha_l.ako** = a large metal ingot (G.) **d.a_l.** = a branch of tree (G.)

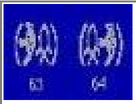
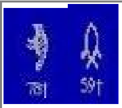
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



[Pl. 39, Tree symbol (often on a platform) on punch-marked coins; a symbol recurring on many tablets of SSVC].

The combination of glyphs of fish and quail; Sign 63 and Sign 64: **bhed.a** 'fish'; **bed.a** 'hearth'; **bat.a** 'quail'; **bat.a** 'iron'; i.e., furnace for (s)melting iron. **bed.a** 'ingot' may be connoted by the ligaturing:

( ) 

		Signs 63 and 64, bird and fish Hako, 'fish'; **hako**, 'axe'; bat.a, 'quail'; **bat.hi**, 'furnace'; the ligature () = **kut.ila san:gad.a,** i.e. bronze furnace

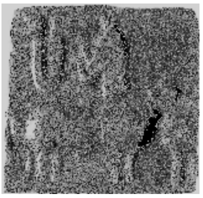
bhat.a = warrior
bhat.i = furnace; bhat.a = kiln
va_karan- = soldier

d.han:gar = blacksmith
hako = fish
hako = axe

bed.o = a ship, a vessel (G.lex.) be_d.a_ = boat (Skt.)(CDIAL 9308). bodam = sail (Santali.lex.)

bat.a = a kind of iron (G.lex.) **bhat.a** = a furnace, a kiln; it.a **bhat.a** a brick kiln (Santali)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com



h452a 4124 (bird + rimmed jar) Is it an egret?

bat.a = **a quail or snipe, *coturnis colurnix* (Santali)**

bat.ai = to divide, share (Santali) [Note the glyphs of nine rectangles divided.]

Furnace or kiln, native metal, zebu bull

bat.a = quail (Santali) Rebus: **bhat.a** = furnace, kiln (Santali).

A zebu bull tied to a post; a bird above. Large painted storage jar discovered in burned rooms at Nausharo, ca. 2600 to 2500 BCE. Cf. Fig. 2.18, J.M. Kenoyer, 1998, Cat. No. 8. Nausharo."Large, painted storage jar with a humped bull tied to a papal or sacred fig tree. A bird, possibly the egret, is sitting on the bull's back. Further along in the panel a wild goat is tied to a tree with ball-shaped leaves or fruit. The goat has alternating hatching ot fill the body, while the humped bull is painted solid black. A geometric panel just below the rim has parallels to earlier pottery in this region and from the highlands of Baluchistan to the west. From shape and painted style, however, the vessel was clearly made at Nausharo. The designs were painted in a grey black pigment on top of a buff colored background. Found in burned rooms of Period ID (2600 – 2500 BCE) along with several other jars that were painted with similar style and motifs. 46 cm. Height, 35 cm. Minimum dia. 10 cm. Base dia." [After Samssun 1992: 248, fig. 29.3, no.3; JM Kenoyer, 1998, p. 188]

adar d.an:gra = bra_hman.i bull; rebus: **aduru** 'native metal'; **d.han:gra** 'blacksmith', that is, 'metalsmith'. *paghaia d.an:gra* a pack bullock (Santali)

d.han:gar = blacksmith
d.an:gar = bull
d.hagara_m = n.pl. the buttocks; the hips (G.)

d.an:go = branch of a tree (Nahali); dagan (Ku.) d.e_nga = to be suspended (Kui)(DEDR 5495) **d.on:gor** = hill, jungle, forest (Nahali); don:gor (Ku.); do~gar = hill, mountain (H.M.)

d.o~ga_ = trough, canoe, ladle (H.)(CDIAL 5568).

dhan:kar = shepherd (Nahali); dhan:gar = shepherd (Ko.M.); dha~_gar = a caste whose business it is to dig wells, tanks etc. (H.);

adar, adar d.an:gra a brahmini bull, a bull kept for breeding purposes and not put to work (Santali) **d.hor** = cow; dhotta_ = cows, cattle (Nahali) **d.hor-ku** = cattle (Ku.); e_k d.hat.t.o_ = a bull (Baori-Lahore); d.hor = cattle, beast (H.M.); do_r (Ko.); d.ho_r.-k = cattle (Gondi); dhorai_ = shepherd (GuB.); t.o~d.a_~ = cattle (Bhili) **adar. odor., adar udur** fat and naked, over-grown, unwieldy; adar. odor.e calaoena he waddled away (Santali) dhur = draught cattle; either oxen or buffaloes; dhur menakkotaea se ban: = has he got plough cattle or not? (Santali) **and.ren** (pl. and.ran) male, man (Pe.); **and.ra** a male animal or bird, male (Kui); an.d.ra_ male (said only of animals)(Kur.); **an.d.ya_** fierce, unmanageable (of hbulls, bullocks, and male buffaloes)(Kur.); an.d.ya a bull (Malt.); **an.d.i_ra** male (Skt.); an.d.ira_ id. (Or.)(CDIAL 1111; DEDR App. 7). **an.d.ga, an.d.ge** = testicle; **an.d.ra** = not effectually castrated (Santali) an.d.ia = male, of animals, birds and trees (Santali) **an.t.ar, in.t.ar** = shepherds (Ta.); an.t.ar id. (Ma.)(DEDR 125). **ad.ar** = herd of cows (Kond.a); **ad.er** id. (Pe.)(DEDR 84). **da_yaro** (Persian da_yareh a circle fr. da_yar fr. der revolving, turning, round) an assemblage; a company; a group (G.)

Rebus lexemes which get depicted as glyphs on epigraphs:

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

aduru = native metal (Ka.); ajirda karba = very hard iron (Tu.); ayil = iron (Ta.); ayir, ayiram any ore (Ma.)(DEDR 192). **darap** = metal, excluding iron, money, wealth (Santali) **darja** = property, house and stock; khub darja menaktaea = he is very well-to-do; darja = degree, rank, station (Santali) **daran:, daran: daran**: = white hot, blazing hot, glowing (Santali) **dr.s'ad** = a stone (Skt.G.) **ayas** metal, iron (RV.); **ayo_** (Pali); **aya** iron (Pali.Pkt.); **ya** id. (Si.)(CDIAL 590). **yahun.u** iron filings (Si.)(CDIAL 589). **yakad.a** iron (Si.); **ayaska_n.d.a** a quantity of iron, excellent iron (Pa_n..gan..) **atar** = fine sand (Ta.); **adaru** = a sparkle (Te.); **ayir** = iron dust (Ma.) **at.a_r** = sand (in Kathiawa_d.)(G.); **adar** = the waste of pounded rice, broken grains (Kur.); adru = broken grain (Malt.)(DEDR 134).

d.e_r = heap (Pas'); heap, stor, granary (K.); **d.her** = heap, large quantity (Ku.); large lump (M.); heap (H.G.)CDIAL 5599).

The early substratum forms are retained in Kannada and Telugu lexemes as: **ad.aru** Cognate: Skt. root **dru** = wood.

ad.aru = twig; ad.iri = small and thin branch of a tree; ad.ari = small branches (Ka.); ad.aru = a twig (Te.)(DEDR 67). **ad.d.o, ard.u** = tree, wood (Nahali)

d.ar = a branch of a tree; **dare** = a tree, a plant; to grow, to grow well; **ban: darelena** = it did not grow well; **toa dare** = mother, the support of life (Santali) **dare kudrum** = cultivated for its fibre, *hibiscus cannabinus* (Santali) **da_ru** = wood (Skt.G.) deva-da_ru (Skt.); **devada_r** a species of pine; dealwood (G.); **devada_ri_** adj. made of fir-wood (G.) dru = wood; druma tree (MBh.); duma tree (Pali.Pkt.); duminda the Bodhi tree (Pali)(CDIAL 6637, 6639). da_rava = made of wood (Mn.); da_ru, da_ro wood (Dm.); da_rav beam, rafter (K.); da_ruvu wooden (K.)(CDIAL 6296). Da_ru piece of wood (MBh.); in RV. Nom. da_ru (gen. **drun.ah, dro_h**); da_ru = wood (Pali.Pkt.); dar timber, firewood (Kho.); da_r timber (Ku.N.H.)(CDIAL 6098). de_vada_ru = Himalayan cedar (MBh.); de_vada_ruka (Pali); de_vada_ru (Pkt.); di_a_r (K.); dya_r (Ku.); dya_ra_n.i deodar forest (Ku.); dewa_r (N.)(CDIAL 6531). **deru, dreu-.** To be firm, solid, steadfast; hence specialized senses "wood," "tree," and derivatives referring to objects made of wood. Derivatives include *tree, trust, betroth, endure,* and *druid.***1.** Suffixed variant form **drew-o-*. **a.** tree, from Old English *trēow*, tree, from Germanic **trewam* (Bartleby dictionary)

ad.a_li_ = a small tray of wood (G.); Skt. *a_* intense. + *stha_li_, tha_l.i_* 'a dish'; ad.uso = name of a tree (G.); at.avi_ = a forest (Skt.G.) **at.a_ro** = household furniture (G.) **a_d.an.i_** [Dh. Des. **satti_** = Skt. vakrapa_da trayam vr.ttam da_ru kalas'a_dha_ra bhu_tam, fr. Skt. sapti = a horse; or, Hem. Des. **ohad.an.i_** = Skt. phalaka_rgala_ = a wooden latch] a small wooden stool on which bread is made (G.) **a_d.alum** = a piece of wood with which fibres or threads are twisted into a rope [Dh. Des. ohad.an.i_ = Skt.phalaka_rgala_](G.) **a_d.asar** = a cross beam; a beam (G.) **argal.a, argala, agan.i** = bolt or bar to fasten a door (Ka.); argal.amu = a wooden bolt, bar or pin for fastening a door (Te.); argoli = crossbar, rail (Kui); argala (Skt.); aggala (Pkt.)(CDIAL 629; DEDR App. 9). **daran:** = steep, precipitous (Santali)

dar.e = strength, to vanquish, to conquer; dar.e hor = an able bodied man (Santali)

da~r.e~ = a sacrifice, a victim; to devote to sacrificial purposes (Santali

at.al = a kind of fish; at.alai = a marine fish (Ta.); at.ava = a kind of marine fish (Ma.); ad.ami_nu = a kind of fish; ad.a_vu id. (Tu.)(DEDR 68). **dar.ka**, dan.d.ka = a species of fish (Santali)

darka dale = with disheveled hair; darka daleya rakeda = she weeps with her hair loose and in disorder; darkal markal, darkul markul = with disheveled hair, applied to men as 'darkadale' is applied to women (Santali)

dar.kak, dhan.dka, d.han.d.kak = stalks of certain crops left in the ground at time of reaping; stubble, a stalk (Santali)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

at.avari = chin (Pe.Mand.)(DEDR 69).
da_ra adj. (Persian da_r 'keeper' fr. da_s'tan = Skt. dhru, dh_r, to hold, to keep, to put) A Persian suffix showing 'holder, keeper, bearer, possessor' (G.)

da_ra = a woman, wife (G.); da_ra id. (Skt.)

Semantics: pounding, powdering, working in wood
Glyph: **"**
ad.aruni = to crack (Tu.); at.aruka = to burst, crack, slit off (Ma.); at.ar = a splinter; at.arcca splitting, a crack; at.arttuka, at.attuka = to split, to tear off, open (an oyster)(Ma.)(DEDR 66). **da_ravum** = to tear, to break (G.) **dar** = a fissure, a rent, a trench; **darkao** = to crack, to break; bhit darkaoena = the wall is cracked (Santali) **tarukku** = to pound, break (Ta.); tarakkuka = to deprive rice of its husk (Ma.)(DEDR 3099). **at.a** = flour, meal (Santali) a_t.u = to move, to shake; a_t.al = shaking, moving (Ta.)(DEDR 347) at.ava_vum = to be crushed (G.); a_t.o = crushing; flour; a_n.t.o [a_vartana, a_vr.tti] = a turn; a twist (G.)]; at.a_vum = to be pounded; **va_t.avum** = to pound; to ground by rubbing upon a stone with a muller; to mash (G.)[Skt. vr.tta, varta = Latin verto 'to turn); va_t.a = an iron circle put round the wheel of a carriage; a tire (G.)] va_t.ika_ = a garden; an orchard (Skt. va_t.a 'an enclosed space')(G.) **va_d.iyo, vha_d.iyo** = a ship-builder; a carpenter; a title given to housebuilders and shipwrights; va_d.havum = to cut; va_d.ha = the edge of an instrument for cutting; a cut, a wound; reaping a field (G.) a_d.iyum = a saw (G.) da_ru-kha_num = a powder magazine; powder-works; fire-works; a liquor-shop (G.); da_ru = spirituous or vinour liquor (G.Persian) da_l-ci_ni_ [See da_ru 'wood' + ci_na 'China'](G.) daru = gunpowder; daru = distilled liquor, from matkom flowers (Santali) **dar cini** = cinnamon (Santali)

a_d.asod.a, a_d.asod.iyum = the manner of wearing the upper garment so that it covers one of the shoulders, and leaves the other uncovered; so_d.a = folds of a garment (G.)

a_n.t.a = a knot or noose in thread; a_n.t.o = a turn, a twist; a_n.t.i_ = a knot in thread; a skein of thread (G.) **adk-** to tie (knot)(Go.); atuku, aduku = to join, to unite (Te.)(DEDR 145). **ta_r, ta_ram** = cord, rope (Ta.); da_ra string, thread (Ka.Tu.); da_ramu id., cord, twine (Te.); da_ra = waistband, girdle (Pkt.); davara(ka) = string (Skt.)(DEDR 3167; CDIAL 6225).

dari, dari chinar = a prostitute (Santali)

d.aren, **ad.aren** to cover up pot with lid (Bond.a); d.arai to cover (Bond.a.Hindi)

ad.rna_ = to twist back one's limbs or bend the body inward (as under threat of a blow)(Kur.); ad.re = to strut; ad.ro = a swaggerer (Malt.)(DEDR 108).

ad.ar an attack (Ka.); *at.ar* to beat, strike, mould by beating (Ta.)(DEDR 77).
ad.ar = harrow; *a~r.gom* 'a clod crusher, a harrow without teeth; to harrow; *a~r.gom bhuk* 'this hole into which the shaft to which the cattle are yoked, is inserted into the harrow' (Santali)

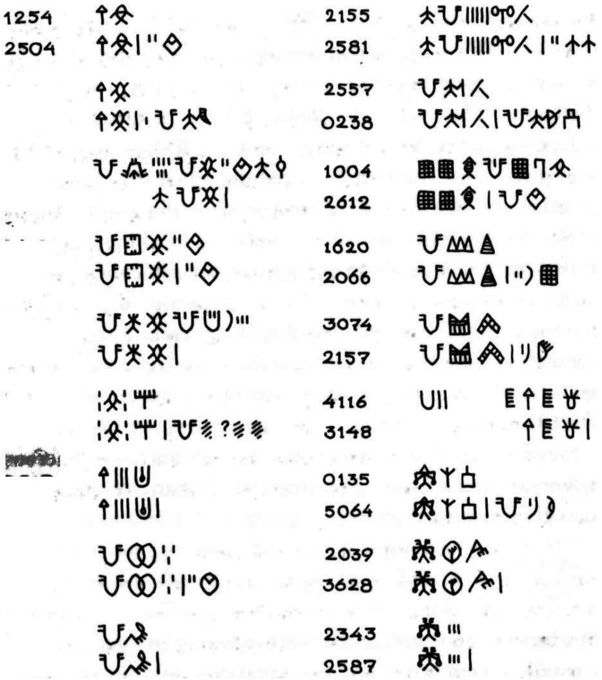
Alternatives:
The dominant images are: **khu~t., bagal.o, med.h** : zebu, egret (paddy bird), post. The rebus substantives are: **ku_t.a**, 'chief (**kut.ha_ru**, 'writer, armourer')'; **bagal.o**, 'merchant vessel (boat)'; **med.h**, 'merchant's clerk, writer'.

Hole: kud.e (Tu.); got.aru (Ka.), khod.ar (H.) [Note the glyphs of dotted circles].

Variation between absence and presence of the sign | at the beginning of 18 parallel sign sequences. [After Parpola, 1994, Fig. 5.2]

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

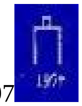
khu~t.ro = entire bull; khu~t. = bra_hman.i bull (G.) **khun.t.iyo** = an uncastrated bull (Kathiawad. G.lex.) **kun.t.ai** = bull (Ta.lex.) cf. khu~_dhi hump on the back; khui~_dhu~ hum-backed (G.)(CDIAL 3902).



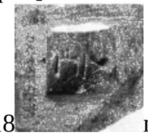
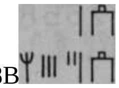
The zebu is: **khu~t.**, a bra_hman.i_ bull, a bull found even today in many parts of Gujarat, roaming the streets of Ahmedabad, for instance. The word may connote the rebus of **kut.ha_ru**, armourer or weapons maker (metal-worker), also an inscriber or writer.
khu~_t.ad.um a bullock (used in Jha_la_wa_d.)(G.)
khu~_t.iyum an upright support in the frame of a wagon (G.)

Parpola notes that the sign appears to be redundant since many texts occur with comparable sign sequences but without such a sign. The sign may be a determinative, just as a 'man' glyph may be semantic determinative of a function or title. (Parpola, 1994, p. 80).

The long linear stroke on m0318 can be :
kod.a, kor.a = in arithmetic one; 4 kor.a or kod.a = 1 gan.d.a = 4 (Santali.lex.)

If **kod.a** is a determinative of Sign 197  including on the seal m0318, the sign may be read as: **kod.a**

Rebus, substantive: **kod.,** 'artisan's workshop'. [Alternative: Line **ger-a** (Te.), gira_ (Or.); rebus: Battle **keral.** (Ka.); ceru (Ta.) qeru]

m0318m0318B
2626

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Fish glyphs

hako = axe (Santali)

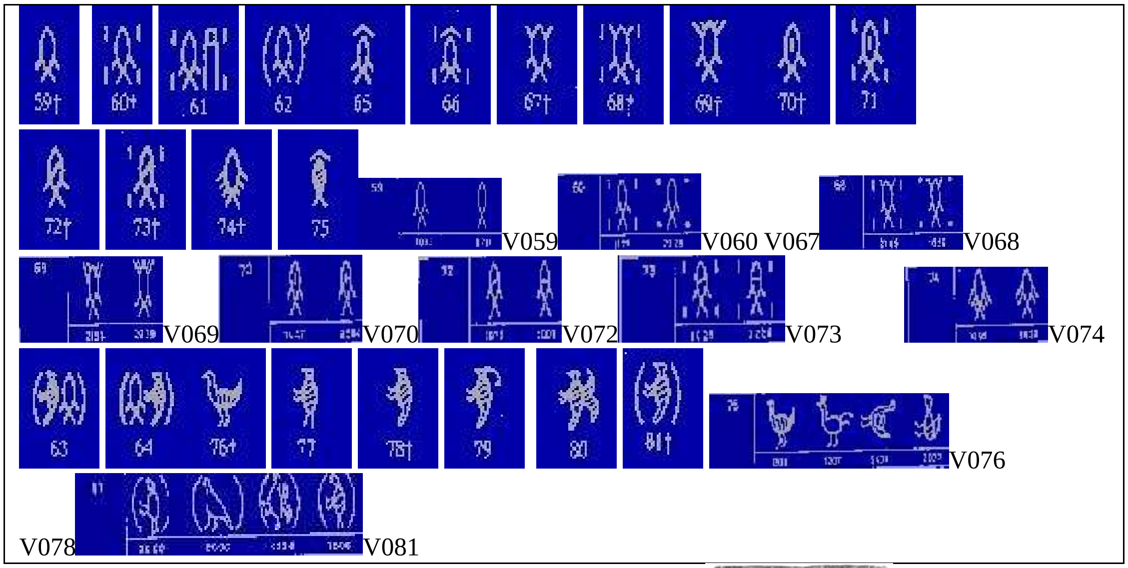
hak to split (Bahnar); hak to tear; jik to cut (Stieng); gc? axe (Bonda) cf. paku (pakuv-, pakk-) to be split, divided (Ta.) (DEDR 3808).

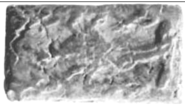
hako fish (Santali)

ke~r.e~ ko~r.e~ an aboriginal tribe who work in brass and bell-metal (Santali.lex.)
ker.e sen:gel fire in a pit, as the Koles burn charcoal (Santali)

ken.t.ai, freshwater fish, barbus (Ta.); **ken.t.a** a carp, cyprinus; gen.d.e-mi_n a sort of fish (Ka.); gan.d.e, gen.d.e a fish; gen.d.i, gen.d.iya, gen.d.e the carp, cyprinus fimbriatus (Te.; kin.d.o_ a species of fish; kindo_ injo~ carp fish (Kur.)(DEDR 1947). kan.d.a_yi = gar fish (fish) (Ta.)

Fish and associated glyphs

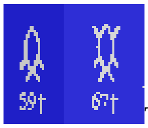


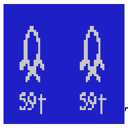
(55) (44) **Sign 59 (381)** Copper tablets (14)  h172B Field Symbol 36 (17)

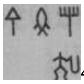
Sign 59 : **bed.a hako** = a fish (Santali)
Rebus: **bed.a** = hearth; **hako** = axe (Santali)

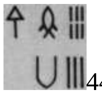
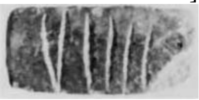
In the corpus of epigraphs, fish signs frequency is 1241 and there are 14 objects shaped like fish, all of which were found at Harappa.

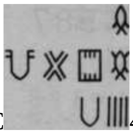
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

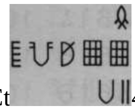

This is a frequent pairing (about 60 occurrences) of ‘fish’ signs.

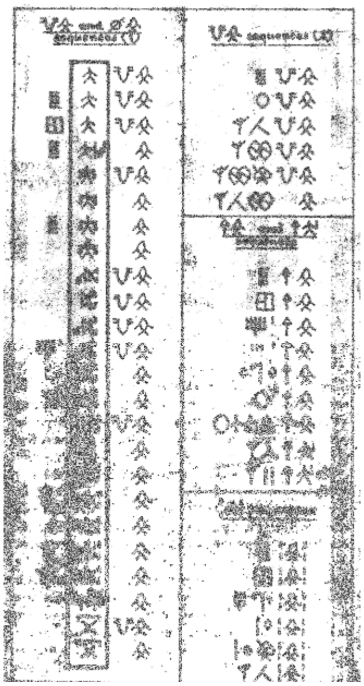

The ‘fish’ sign also gets duplicated in pairs.

h940Ait h940Bit  4453 [Incised tablet]

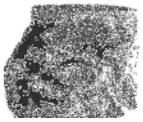
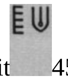
h942Ait h942Bit  4490 h350A 

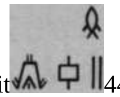
h350B h350C  4576

h850At h850Bt h850Ct  4642



4604

h885Ait  h885Bit  4530 Fish.

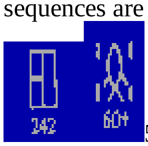
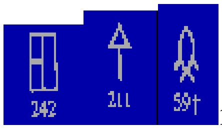
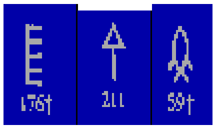
h884Abit  4437

The ‘fish’ glyphs are also ligatured with a circumgraph of four short strokes: The circumgraph of four short strokes is: *gan.d.a* ‘four’

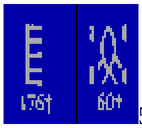
gan.d.a ‘valiant male or hero’

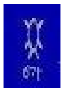
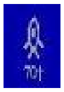
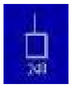
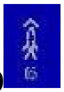
Final sign clusters after ‘fish’ sign types and ‘man’ signs. Framed ‘man’ and other signs framed in a column are found only after ‘jar’ sign or its zero variant. [After Parpola, 1994, fig. 6.6]

On the use of circumgraphs associated with the 'fish' sign, Parpola notes (1994, pp.69-70): "…the four strokes around the ‘fish’ sign may in fact be understood to be read after it, and that their meaning is close to the sign ‘arrow’ that is often found in this position." The following sequences are shown as evidence.

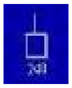
 5477  1554 

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

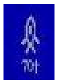
5477 Twenty signs occur with the circumgraph of four short strokes; many of these 20 signs occur as final motifs of the text, functioning similar to the ‘jar’ sign which terminates many texts. The circumgraph may, therefore, be the terminating ‘word’ of the text, functioning similar to the 'arrow' sign. The 'arrow' sign terminates 184 inscriptions (out of a total of 227 inscriptions in which the 'arrow' occurs).

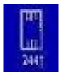
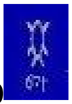
 (44)  (24)
 (18) (20) **Sign 65 (216)** Copper tablets (16)

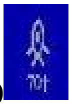
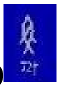
Sign 65 is a ligatured glyph: **bed.a hako** = a fish. Rebus: **bed.a** = hearth (G.) ligatured with a ‘lid’ glyph. d.aren-mund.i lid of pot; **d.aren, ad.aren** to cover up pot with lid (Bond.a); d.arai to cover (Bond.a.Hindi) Rebus: **aduru** ‘native metal’ (Ka.), i.e. hearth for native metal.

Pairing sign  Liquid measure: **ran:ku**; rebus: **ran:ku** = tin (Santali)

Pairing sign **savat.u, savut.u, saut.u, so_t.u** = ladle, spoon (Ka.) Rebus: **caval.ai** = lead, silver (Ta.)

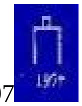
 (28) (26)

 (32) (21) **Sign 67 (279)** Copper tablets (8)
Sign 67: **a~s** ‘scales of fish’; rebus: **ayas** ‘metal’ (RV) bed.a hako = a fish; rebus: **bed.a** = hearth. Thus, **a~s bed.a** = metal hearth.

(10) **Sign 70 (73)** Copper tablets (5)
A spot or mark is ligatured to ‘fish’ glyph: **dag** = to mark, stain, brand, cauterize; a blemish, a spot, stigma, mark (Santali)
Rebus: **dagad.a, dagad.o** = a large stone; a large lump of earth (G.)
bed.a hako = a fish; rebus: **bed.a** = hearth. Thus, Sign 70 denotes a hearth for stone or lump of earth.
(21)**Sign 72 (188)** Copper tablets (20)
Glyph is a slanting stroke ligatured to ‘fish’ glyph: **d.ha_l.iyum** = adj. sloping, incliding; d.ha_l. = a slope; the inclination of a plane (G.)
Rebus: : **d.ha_l.ako** = a large metal ingot; d.ha_l.aki_ = a metal heated and poured into a mould; a solid piece of metal; an ingot (G.)

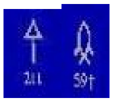
bed.a hako = a fish; rebus: **bed.a** = hearth. Thus, Sign 72 denotes a hearth for metal ingot.

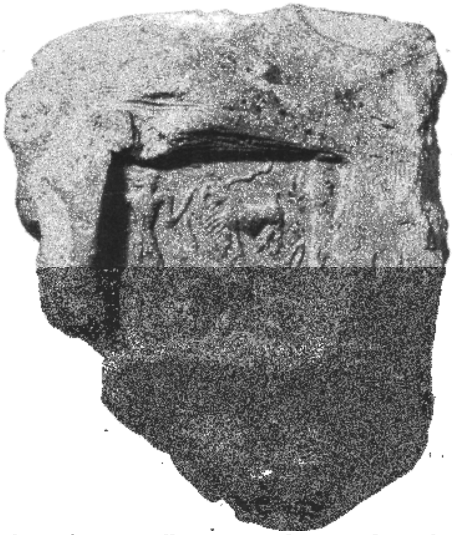
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Sign 61 Sign 197 is ligatured with ‘fish sign’ and enclosed within a circumgraph.

The three ligaturing components of Sign 61 may be read as: **gan.d.a** ‘four’; **bed.a** ‘fish’; **kod.a** ‘sluice’. The rebus substantives are: **kan.d.a** ‘furnace’; **bed.a** ‘hearth’; **kod.** ‘artisan’s workshop’ [Alternative: **d.a_l**. = water-course (G.); **d.ha_l.o** = large metal ingot; **a~s** = scales of fish (Santali); rebus: **aya** = iron (G.); **ayah**, **ayas** = metal (Skt.)]

The circumgraphed 'fish'sign (Sign 60), i.e. the 'fish' enclosed within four circumgraphs or four short-strokes can be read as two words: X plus **bed.a** ‘hearth'. What is X or what is the 'meaning' or 'reading' of the 'circumgraph'?

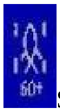
 = In an incisive, contextual analysis of the corpus of inscriptions containing the 'fish' sign, Asko Parpola demonstrates that the sign sequences (Sign 211 and Sign 59) are functionally similar to the ligatured sign (fish enclosed in four circumgraphs: Sign 60) (cf. Asko Parpola, Asko Parpola, 1994, *Deciphering the Indus Script*, Cambridge Univ. Press, Fig. 6.6, p.94) **er-aka** 'upraised arm' (Ta.); rebus: **eraka** = copper (Ka.)



kod.a, kor.a = in arithmetic one; 4 **kor.a** or **kod.a** = 1 **gan.d.a** = 4 (Santali.lex.)

Synonyms for **kod.** ‘artisan’s workshop’**: s’al** (arrow); **s’al** (workshop).

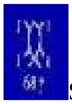
The word for a 'set of four' is: **gan.d.a** (Santali); **bar gan.d.a poesa** = two annas; **pon gan.d.a aphor menaka**, there are 16 bunches of rice seedlings; **gan.d.a gun.d.a** to be broken into pieces or fragments; fragments; **gan.d.a gut.i** to dive, to make up an account; the system of **'gan.d.a gut.i'** is to put down a pebble, or any other small object, as the name of each person entitled to share is mentioned. Then a share is placed alongside of each pebble, or whatever else laid down. (Santali.lex.)

Sign 60Thus, the circumgraphed ‘fish’ sign 60 can be read as: **bed.a gan.d.a** (rebus: **bed.a** ‘hearth’, **kan.d.** ‘furnace’), i.e. hearth and furnace. Cf. *kan.t.am* ‘arrow’ (Ta.)

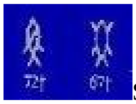
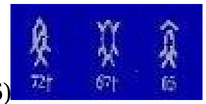
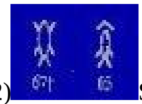
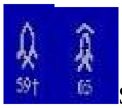
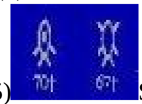
Banawali 23A A tall person with an upraised arm in front of a one-horned bull and a markhor with upturned faces (apparently listening to the person); two signs occur: ‘fish’ and ‘arrow’ graphemes. The sealing is on terracotta. The ten steatite seals and one sealing have only come from the lower town, not the citadel…these seals were generally recovered from houses which on the basis of their contents…have been tentatively attributed to a trader or jeweler (Bisht, R.S., 1982, Excavations at Banawali: 1974-77, in: Gregory L. Possehl, *Harappan Civilization*, Delhi, p.118).

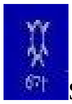
Glyph: **gan.d.a** ‘male person, hero’ (Ka.)

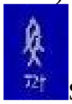
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

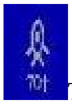
Sign 68 **ken.t.ai** ‘carp’, **gan.d.e** ‘fish’; rebus: **ke~r.e~** bell-metal, brass. **gan.d.a** ‘four’; **kan.d.** ‘furnace’

The frequently occurring pairs of 'fish' ligatures are as follows (frequencies are shown in parenthesis):

Signs 72, 67 (6) Signs 72, 67, 65 (2)Signs 67, 65 (4)
Signs 59, 65 (5)Signs 70, 67 (3)

Sign 67; Alternative 1: four scales, a count of four, **gan.d.a**; rebus: **kan.d.** ‘furnace’, thus a count of four **‘a~s’** metal (ayas) furnaces; alternative 2: **ko_la_** ‘flying fish, exocaetus; garfish, belone (Ta.); ko_la_-mi_n, ko_li needle-fish (Ma.)(DEDR 2241); rebus: **kol** = metal; working in iron (Ta.); kole.l –smithy’ (Ko.)(DEDR 2133).

Sign 72 with a sloping ligature can be explained: **d.ha_l.iyum** = adj. sloping, inclining; d.ha_l. = a slope; the inclination of a plane; d.hal.avum = to incline, to lean over (G.); rebus: **d.ha_lako** = a large metal ingot (G.) **a~s** = scales of fish (Santali); rebus: aya = iron (G.); **ayah**, **ayas** = metal (Skt.) Thus, Sign 72 can be read as: **d.ha_l. ayas** = large metal ingot.

The ligature of a short linear stroke on Sign 70 may be a grapheme (synonymous with Sign 72) and may also connote: **d.ha_l** = a shield, a buckler; the grand flag of an army directing its march and encampments; the standard or banner of a chieftain; a flag flying on a fort (G.); rebus: **d.ha_l.ako** = large metal ingot (G.) **ams’a** = a portion; the numerator of a fraction; an attribute; a degree in circular or angular measurement (G.); rebus: a~s = scales of fish (Santali) [**ams’a** is a technical term used in the R.gveda to describe an attribute of **soma**; in this context, **ams’u** may be a description of the metallic protrusions of **soma**, electrum mineral ore. Cf. ams’u = the ray, the sun (G.)]

These sequences demonstrate that the five types of 'fish' ligatures, i.e. Signs 59, 65, 67, 70, 72 are distinctly differentiated substantives.

Within the circumgraph, there are five 'fish' related signs and ligatures, i.e. the types of 'fish' ligatures enclosed within the circumgraph (of four short strokes):

Λ **affixed on top of ‘fish’ glyph**

ad.aren, d.aren to cover up pot with lid; d.aren-mund.i lid of pot (Bond.a); d.arai to cover (Bond.a.Hindi) tal.l.e wooden handle, as of an axe (Ka.Tu.)(DEDR 3137). d.alu, ad.alulo to cover something (Boind.a) d.a_narai lid of pot (Bond.a.Hindi)

Alternative:

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

man.d.iga = an earthen dish (Te.lex.) **man.d.e** = a large earthen vessel (Tu.lex.) **man.di** earthen pan, a covering dish (Kond.a); cooking pot (Pe.); brass bowl (Kui); basin, plate (Kuwi)(DEDR 4678). man.d.e = head (Kod.)(DEDR 4682).

man.d.a_ = warehouse, workshop (Kon.lex.)

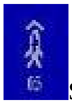
aduru native metal (Ka.); **ajirda karba** very hard iron (Tu.); **ayil** iron (**Par..amo. 8**)(Ta.); **ayir, ayiram** any ore (Ma.)(DEDR 192). **ayas** metal, iron (RV.); **ayo_** (Pali); **aya** iron (Pali.Pkt.); **ya** id. (Si.)(CDIAL 590). **yahun.u** iron filings (Si.)(CDIAL 589). **yakad.a** iron (Si.); **ayaska_n.d.a** a quantity of iron, excellent iron (Pa_n..gan..) **atar** = fine sand (Ta.); **adaru** = a sparkle (Te.); **ayir** = iron dust (Ma.)

ayil javelin, lance (**Jn-a_. 33**)(Ta.); **ayil** surgical knife, lancet (**Ja_n-a_. 30**); **ayilavan-** Skanda as bearing a javelin (**Tiruppu. 312**)(Ta.lex.) **ayil** sharpness (**Na_lat.i. 386**)(Ta.) **ayil** javelin, lance (Ma.); **ayiri** surgical knife, lancet (Ma.)(DEDR 193).

bed.a hako 'fish' (Santali)
bed.a 'either of the sides of a hearth' (G.)

bhin.d.a a lump, applied especially to the mass of iron taken from the smelting furnace (Santali)

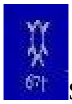
a~s = scales of fish (Santali); rebus: aya = iron (G.); **ayah**, **ayas** = metal (Skt.)

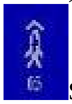

Sign 65 The ligatured 'fish' sign can be interpreted as: **adaru bed.a** 'hearth for (smelting) native metal'. Alternative: **a~s + dagni** = scales of fish + an iron with which an owner brands his mark upon his cattle (Santali); rebus: d.hakni, d.haknic, d.hakon = an earthenware lid for a kan.d.a (Santali) + ayas 'metal'.

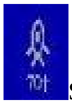
Code for ligatured 'fish' signs

Based on this concordance table, the possible interpretation of the ligatured 'fish' signs may be derived:

The circumgraph is orthographed with four short strokes. Four is a landing-point in ancient numeration in Bharat.


Sign 67 *ken.t.ai* carp (Ta.); **gan.d.e** = a fish (Te.lex.) The glyphs of ligatured fin: **cet.t.ai** fin (Ta.); cat.t.upa wing (Te.)(DEDR 2764) Rebus, substantive: **ke~r.e~** bell-metal, brass.
kolli = a kind of fish (Ma.); koleji (Tu.)(DEDR 2139).
Fish: gullo (Tu.), golla-dondu (Te.), **ko_la_n** = needle-fish (Ma.) ko_la (Ta.)
xola_ tail (Kur.); qoli (Malt.)(DEDR 2135)
kol 'smithy'; **kulme** = furnace (Ka.); kolimi = furnace (Te.)
Hence, Sign 70 = **kol + bed.a** 'smithy and hearth'

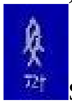

Sign 65 **adaru bed.a** 'hearth for (smelting) native metal'


Sign 70 A short stroke within the body of the fish) affixed to the basic 'fish' pictograph.

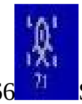
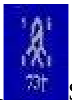
sal stake, spike, splinter, thorn, difficulty (H.); **sal.i_** small thin stick; **sal.iyo** bar, rod, pricker (G.); **s'ol.** reed (Kho.)(CDIAL 12343). **salleha, selleha** = splinter (Ka.lex.)
Rebus: **sal** 'workshop' (Santali); **s'a_la** id. (Skt.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

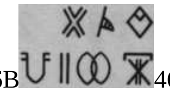
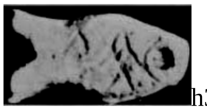
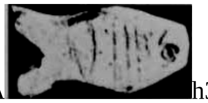
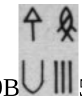
Hence, **sal + bed.a** (spike + fish); rebus: **sal** ‘workshop’; **bed.a** ‘hearth’

Sign 72 [Transverse line ligatured on fish or circumgraphed fish.The word *gan.d.* has a meaning, 'across', 'transversely' **gan.d. gan.d ar.eme** ‘throw embankments across at several places’; **gan.d.ra, gan.d.rao** full of nicks or notches, to be nicked or notched; **gan.d.ra gun.d.ra** to cut or break into pieces (Santali.lex.) **gan.d.ralu, gan.d.arulu** pl. pieces, fragments, chips (Te.lex.) (Santali.lex.) This attribute, ‘transverse’ may be denoted by the transverse ligature used on the body of the 'fish' rebus: kan.d. ‘altar, furnace’] If so, **bed.a kan.d.** ‘furnace and hearth’ Alternative: kolli a fish (Ma.); koleji (Tu.) (DEDR 2139).

badhor. ‘a species of fish with many bones’ (Santali)
badhor, badhor.ia = crooked, cross grained, knotty (Santali.lex.)
badhoria ‘expert in working in wood’(Santali)

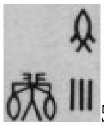
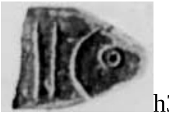
gan.d.ra = tree trunk (Kuwi); kan.d.a = bough (Pali)
Sign 66Sign 71Sign 73 These circumgraphed signs with ‘fish’ motifs can also be interpreted in the context of **kan.d.** ‘altar, furnace’ (rebus: four short strokes) For e.g., Sign 71: **kol + bed.a** ‘smithy and hearth’ + **kan.d.** ‘altar, furnace’

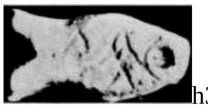
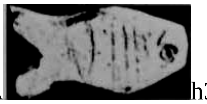
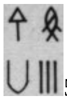
Some inscribed objects containing the Sign 59 or ligatures including Sign 59
Some objects with only the ligatured 'fish' sign -- as in m-1084, m-1118, k-034, k-037, m-999 -- together with an 'antelope' pictorial motif, indicate that the 'fish' sign should be read as a 'substantive' and not assigned an alphabetical or syllabic value. Seal impressions containing the 'fish' sign also confirm that this sign may represent a possession, a property item or a 'commodity' traded. It may be related to processing or is a 'metal' object since it occurs on objects such as: copper plate/copper rod/copper celt.

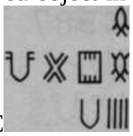
A fish appears together with a combined field symbol of the head of a unicorn attached to a short-horned bull motif. That a ‘fish’ glyph may connote a substantive is indicated by some inscribed objects shaped like a fish or an axe or a sickle.
h236A h236B4658 Incised miniature tablet. Object shaped like fish axe or sickle. h329Ah329B5496 Pict-68: Inscribed object in the shape of a fish.

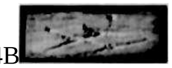
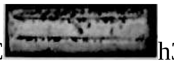
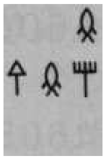
The fish glyph alone is adequate to complete the inscription on some objects: m0410 Pict-64: Lizard (gharial?) snatching, with its snout, the fin of a fish har607 Steatite tablet, incised [1993-1995 excavations] Pict-85 Standing person with horns and bovine features (hoofed legs and/or tail).

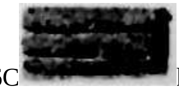
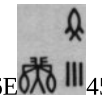
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

h288A h288B 5463 h330A h330B 4560

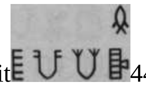
h329A h329B 5496 Pict-68: Inscribed object in the shape of a fish.

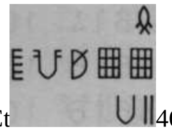
h350A h350B h350C 

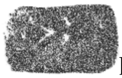
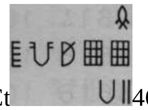
4576 h364A h364B  h364C h364E 

4635 h366C h366E 4590

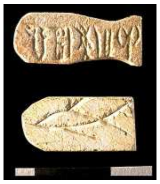
h977Ait h977Bit h977Cit h973Ait

h973Bit 4411 h976Ait h976Bit h976Cit 4588

h849At h849Bt h849Ct 4645

h850At h850Bt h850Ct 4642

h851At h851Bt h851Ct



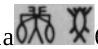
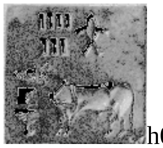
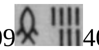
Slide 208 Two steatite tablets. Two inscribed and baked steatite tablets from the Trench 54 area. One has the shape of a fish (H2000-4452/2174-191), while the other has a fish sign inscription (H2000-4477/2227-11). [Harappa, 2000 excavations].

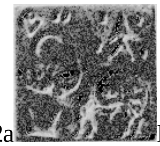
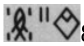
Kalibangan037 8042 Kalibangan034 8052

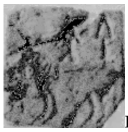
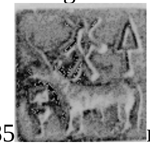
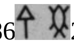
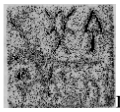
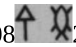
The following examples show the dominant use of the fish glyph together with another sign and/or a ligature:

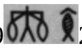
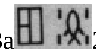
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

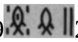
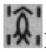
c014a

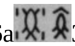
Chanhudaro21a6209 h0094009 m1118 3157

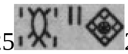
Kalibangan032aKalibangan033 8025

m0185m01862161 m0227 2226 m02082047

m0729 1177 m09692239 m0973a2585

m0978 m09992452 m1084 1316 Bison

m1086a3070

m0978 m02252199

Inscribed lead celt or ingot fragment from the Trench 54 area (Slide 209 H2000-4481/2174-321). The object was apparently chiseled to reduce its size. Lead may have been used as an alloy with copper, for making pigments, or as medicine. The epigraph may include a square with nine divisions: lokhan.d.a – **lo** 'nine', **khan.d.a** 'divisions'; rebus: **loh** 'metal' **khan.d.a** 'ingot'.

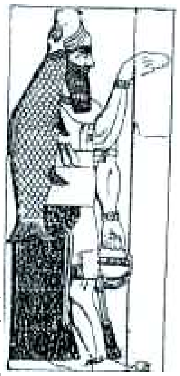
Tell Suleimeh (level IV), Iraq; IM 87798; (al-Gailani Werr, 1983, p. 49 No. 7). A fish over a short-horned bull and a bird over a one-horned bull;

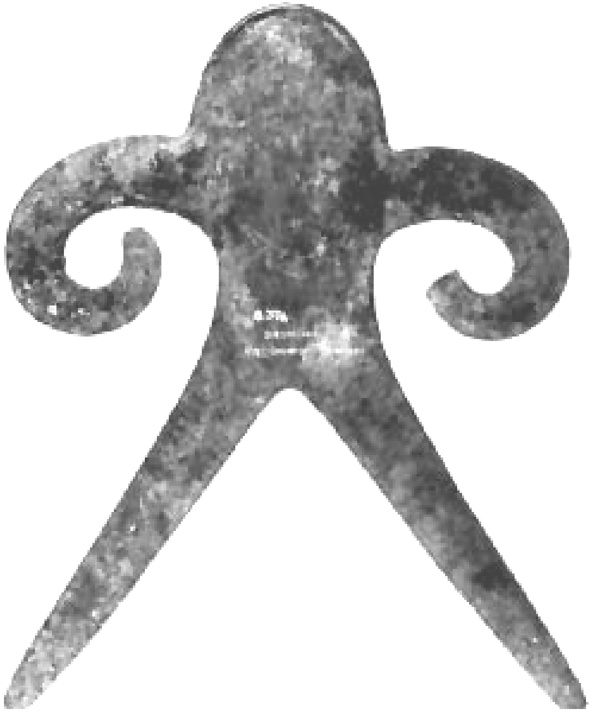
cylinder seal impression, (Akkadian to early Old Babylonian). Gypsum. 2.6 cm. Long 1.6 cm. Dia. [Drawing by Larnia Al-Gailani Werr. Cf. Dominique Collon 1987, *First impressions: cylinder seals in the ancient Near East*, London: 143, no. 609]

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Parallels of ‘fish’ glyphs in Mesopotamia

Water-god Enki, streams of water flow from his shoulders; two stars beside his head distinguish the naked anthropomorphic man. Fish is seen beside the stream. 18th cent. BCE Syrian cylinder seal impression. Pierpont Morgan Library, New York City; cf. Porada 1971. cf. Asko Parpola, 1994, Fig. 10.8, p. 184.





Masked as Enki, half-fish and half-priest; from a relief of Assurnasirpal II (883--859 BC) from Calah. Gypsum. Height ca. 2.5 m. After Jeremias 1929: 353, fig. 183; cf. Asko Parpola, 1984, *Deciphering the Indus Script*, Cambridge Univ. Press, Fig. 10.19, p. 190).'Mesopotamian water-god Enki -- distinguished by the fish emblem -- is the principal 'god of creation (d nu-dim-mud = s'a nab -ni-ti)...The Sumerian word apkallu (or abgal) meaning ‘wise man, expert’, and used as the title of a priest, exorcist or diviner, is an epithet of Enki. It refers to mythological sages, too, especially the seven antediluvian sages: the cuneiform texts speak of ‘an oral tradition of the [seven] ancient sages from before the flood’, and ‘the seven sages of the *apsu*, the sacred *pura_du*-fish, who like their lord, Ea, have been endowed with sublime wisdom.’ The servants of Enki are represented in the art as half-fish, half-man' (ibid., p. 190). Since this relief is dated to between 883 to 859 BCE, it is likely that the fish myth was transferred from Bha_rata [S’Br. 1.8.1 which refers to Manu as the survivor of a flood, saved by a great fish (matsya, jhas.a)].

In Bharatiya tradition, 'fish' sign is emphatically associated with copper metallurgy, as attested by the pictorial incised on 'anthropomorph' of the Gangetic Copper Hoard (early 2nd millennium BC).

It will be demonstrated that the sign also occurs in and can be explained in 'metallurgical' contexts on early inscriptions of the civilization, dating from ca. 3500 BC.

Anthropomorph (copper) with ‘fish’ sign

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

A remarkable legacy of the civilization occurs in the use of 'fish' sign on a copper anthropomorph found in a copper hoard. This is an apparent link of the 'fish' broadly with the profession of 'metal-work'. The ‘fish’ sign is apparently related to the copper object which seems to depict a ‘fighting ram’ symbolized by its in-curving horns. The ‘fish’ sign may relate to a copper furnace. The underlying imagery defined by the style of the copper casting is the pair of curving horns of a fighting ram ligatured into the outspread legs (of a warrior).

Anthropomorph with ‘fish’ sign incised on the chest and with curved arms like the horns of a ram. Sheorajpur (Kanpur Dist., UP, India). State Museum, Lucknow (O.37) Typical find of Gangetic Copper Hoards. 47.7 X 39 X 2.1 cm. C. 4 kg. Early 2nd millennium BCE.

bed.a either of the sides of a hearth; cf. **be** two (G.)

takar = sheep, ram, goat, male of certain other animals (ya_l.i, elephant, shark)(Ta.); takaran = huge, powerful as a man, bear etc. (Ma.); tagar, t.agaru, t.agara, t.egaru = ram (Ka.); tagaru, t.agaru id. (Tu.); tagaramu, tagaru id. (Te.); tagar id. (M.)(DEDR 3000).
t.hakkaru, t.hakkarud.u = a deity; an idol; an honorific title same as t.ha_ku_ru, t.ha_ku_ru = a father; a religious preceptor (Te.lex.)

ken.t.ai ‘fish’ (Ta.); rebus: **ke~r.e~** ‘brass/bell- metal’ [**ke~r.e~ ko~r.e~** workers in brass and bell-metal (Santali)]

The shape of the anthropomorph is like the head of a ram with curved horns. [*mel.h* ‘goat’ (Br.); *melukka* ‘copper’ (Pali)]

Alternative:

kor-r-a = black murrel (Te.), kur_icci = a fish many sharp bones (Ma.)
kur-avai = murrel (Ta.)

kor-r-a = ram (Ma.) [**kura** = bull calf (Go.)]

Substantive: **koru** a bar of metal (Tu.)

Bronze head of ibex. Iranian. C. 600-500 BCE. Ht. 14 in. Metropolitan Museum of Art

Copper Hoard culture artifacts: a. antennae hilted sword; 2. anthropomorph; 3. harpoon. [After Fig. 6.1 in DP Agrawal, 2000].

Caches of finds in Uttar Pradesh, Bihar and Madhya Pradesh yielded tools of various types: rings, flat and shouldered celts, trunnion axes, anthropomorphs, swords, double-edged axes, harpoons, socketed axes. Piggott identified these hoards with Harappan refugees. Heine Geldern (1936: 87-88) theorized that the trunnion axe came from Transcaucasia via Persia in c. 1200-1000 BCE. Originating from the Danubian region, the axe-adze also reached India via Iran in c. 1200-1000 BCE and the antennae swords were influenced by the Koban examples dateable to c. 1200-1000 BCE. BB Lal showed that the trunnion axes, the Fort Monroe sword, the socketed axe and axe-adze never occurred in the doab but were confined ot the north-western part of the subcontinent. As a corollary, he showed that the harpoon, the bracelet and the anthropomorph were never found west of the doab. He also noted that the antennae swords of the doab were

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

cast as a single piece, unlike the Koban specimens. Socketed axes and adzes reported from Chanhu-daro, Mohenjodaro and even from Mundigak Period III, are found in much earlier contexts than c. 1200-1000 BCE claimed by Heine Geldern. It is, therefore, clear that the relationships and migrations suggested by Heine Geldern are not tenable. [BB Lal, 1951, Further copper hoards from the Ganga valley and a review of the problems, *Ancient India* 7: 20-39; DP Agrawal, 1982, *The Archaeology of India*, London, Curzon Press.].

"The most distinctive and enigmatic type is the anthropomorphic figure…I have examined several specimens from different museums and found three main features in the anthropomorph: externally sharpened and incurved forearms; plain hind limbs; and a thickened head. It was perhaps used as a missile to kill birds as the sharp arms could cut the bird, the thick head could stun it and the incurved arms could entangle and bring it down. The head was the thickest part and the extremities had thinner cross-sections. An experimental model, when thrown, went in a whirling fashion and seemed to make a trajectory which made one suspect a boomerang-like effect…at Bisauli harpoons and anthropomorphs occur together; at Bithur antennae swords and harpoons are associated; antennae swords and anthropomorphs were found together at Fatehgarh...Lal (1972) associates the Copper Hoards with the Mundari-speaking Australoid tribes of the primeval Uttar Pradesh but YD Sharma identifies them with the Late Harappans. Sankalia sees West Asiatic influence even in the Ochre Coloured Pottery (OCP), especially in the handled and spouted pottery of Saipai. I have suggested a Central Himalayan affiliation (Agrawal 1999). Thus identification of the authorship, at present, is purely a game of guess-work. There are two significant finds of Copper Hoards from Kumaun, one from Bankot and the other from Haldwani…at Bankot, a hoard of 8 anthropomorphic copper objects was discovered…" [DP Agrawal, 2000, pp.105-7].

"Discovery of the anthropomorphs in Kumaon and Nepal leaves no room for doubt…there is a community of the coppersmiths called Tamtas. They are traditional coppersmiths." [MP Joshi, 1995-96, The anthropomorphs in the Copper Hoard culture of the Ganga valley: *Puratattva* 26: 23-31]. [Note. *damr.a* 'steer, heifer'; *damr.i, dambr.i, damt.i* 'one-eighth of a pice (copper)'; *tambra* 'copper'].

Yaks.a, Pitalkhora. Detai of bead necklace of anthropomorphic shape. The hukan faced bead has its legs curved. It is dated to c. 1st cent. BCE. National Museum, New Delhi. [Deshpande,, MN, 1959, The rock cut cave of Pitalkhora in Deccan, *Ancient India*, No. 15, New Delhi, pp. 66-93]. Madhuri Sharma and DP Sharma, 1998, Newly discovered anthropomorphic figures from Nurpur, UP, in: Vibha Tripathi, ed., *Archaeometallurgy in India*, Delhi, Sharada Publishing House, pp. 286-291].

Tamtas also called tamotas (equivalent of Thathera-s of the plains) belonged to the general ja_ti of Dom (Nevill 1904: 105). In the Punjab, **chhatera** is an engraver as distinct from a thathera who makes ornamental vessels (Kipling 1886: 6); the brass founder was called the **bhartya.** [Chakrabarti and Lahiri, 1996, p. 156]. In Tamil, they were **kamma_l.ar** and in Telugu, **kam.sala** (Holder 1894-95: 81).

Boats and egret

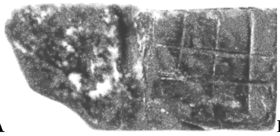
Two types of boats are seen in epigraphs: **bagala** (Arab boat), **san:gad.a** (Sindhu sa_gara boat). One is represented by an egret (paddy bird) and another by a 'standard device' – san:gad.a. The owners of many inscribed objects were boat-people indeed, navigating the Rivers Sarasvati, Sindhu, the coastline of the Sindhu sa_gara and the Persian Gulf. The lexeme **san:gada**. can also be connoted when a composite animal is formed by joining features of more than one animal or by ligaturing the heads of animals to a bovine body. In Mara_t.hi_ **san:gad.a** means a joined animal.

bagalo = an Arabian merchant vessel (G.lex.) bagala = an Arab boat of a particular description (Ka.); bagala_ (M.); bagarige, bagarage = a kind of vessel (Ka.)(Ka.lex.)

kolimi 'furnace' (Te.) **kol** 'metal, alloy of metals' (Ta.)
ko_l, ko_lam raft, float (Ta.): *ko_lam* raft (Ma.); *ko_l* raft, float (Ka.); *ko_lamu* (Te.); *kola* boat, raft (Skt.); *kulla* id. (Pkt.)(DEDR 2238).

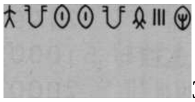
PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Rebus: **ban:gala** = a portable stove (Te.) **bat.a** = quail (Santali); rebus: **bat.hi**, **bat.a** = smelting furnace (Te.) **kuduru** = lizard (Kuwi); rebus: **kuduru** = portable gold furnace (Te.) **bed.a hako** = fish (Santali); **bed.a** = hearth (G.)

m1349A

m1349B [The epigraph may contain a 'partitioned rectangle' glyph]

m1429At

m1429Bt Pict-125: Boat.

m1429Ct

3246 Gharial (or lizard) holding a fish in its jaws.

The raised platform (macan) or cabin on the boat is paralleled on an inscribed object. m1187

May be, this connotes a commodity (copper ingots?) loaded on the boat?

Boat depicted on a Mohenjodaro triangular prism tablet. A rectangular cabin is in the middle flanked by two birds. "A later Buddhist story (Ja_taka no. 339) relates how 'some (Indian) merchants came to the kingdom of Ba_veru [= Ba_bilu in Babylonian], bringing on board ship with them a direction-crow.' Such a crow was released if the sailors wandered too far towards the open sea from the coast; by flying towards the land, the bird would show the right direction" [Parpola, 1994, p. 14] The merchants also brought a royal peacock which would dance at the clapping of the hands which was purchased for a thousand gold coins. The land of Meluhha also supplied to Mesopotamia carnelian (= Akkadian sa_mtu, lit. 'red stone'). The two birds (egrets) may be phonetic determinants of the boat: **bagad.e**, two; **bagla_** egret; **bagala_,** Arab boat. Ca. 1015 BCE., King Solomon and King Hiram of Tyre sent ships sailing directly from the Arabian port to India, touching 'Ophir', Sophir or Sauvira in the Gulf of Khambat (near Lothal) and brought back gold, silver, ivory and peacocks.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Sarasvati Civilization

An overview

A historical project in search of River Sarasvati to discover our roots, has become a magnificent opportunity for national resurgence and to make Bharat a developed nation.

This is presented in three sections: observations, conclusions and areas for further research.

Observations

Many sparks have emerged from the anvils of scholars and researches of a variety of disciplines – all focused on the roots of civilization of Bharat.

Collated together, these sparks have become a floodlight which throws new light on the civilization of Bharat.

It is a new light on the civilization because of the following reasons:

A mighty river, a river mightier than Brahmaputra had drained in North-west Bharat for thousands of years prior to 1500 BCE (Before Common Era).

The collective memory of a billion people, carried through traditions built up, generation after generation, recalls a river called Sarasvati; this memory is enshrined in the celebration of a Mahakumbha Mela celebrated every 12 years at a place called Prayag where the River Ganga joins with River Yamuna. River Sarasvati is also shown as a small monsoon-fed stream in the topo-maps of Survey of India and in village revenue records in Punjab and Haryana.

> Yet, the tradition holds that there is a triven.i san:gamma (confluence of three rivers). The third river is River Sarasvati. This tradition has now been established as a scientific fact – ground truth -- thanks to the researches carried out using satellite imageries, geo-morphological studies, glaciological and seismic studies and even the use of tritium analysis (of traces of tritium present in the bodies of water found in the middle of the Marusthali desert) by atomic scientists. The desiccation of the river was caused by plate tectonics and river migrations, between 2500 and 1500 BCE.
>
> These studies have established beyond any doubt that River Sarasvati was a mighty river because it was a confluence of rivers emanating from Himalayan glaciers; the River Sutlej and River Yamna were anchorage, tributary rivers of River Sarasvati. The river had drained over a distance of over 1,600 kms. from Manasarovar glacier (W. Tibet) to Somnath (Gujarat) with an average width of 6-8 kms. At Shatrana (south of Patiala), satellite image shows a 20 km. wide palaeo-channel (ancient course), at the confluence of five streams – Sutlej, Yamuna, Markanda, Aruna, Somb – referred to as Pan~ca Pra_ci_ Sarasvati in Bharatiya tradition. This becomes Saptatha Dha_ra Sarasvati when two other streams – Dr.s.advati and Ghaggar – join the River Sarasvati at Sirsa

A civilization was nurtured on the banks of this River Sarasvati as recognized through the work of archaeologists and the geographical/historical facts contained in ancient texts of Bharat, such as the

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Mahabharata and *Pura_n.a.* This civilization was an indigenous evolution from earlier than 10000 BCE and can be said to be one of the oldest civilizations in the world, heralding the Vedic heritage.

Over 2,000 archaeological sites have been discovered in the Sarasvati River Basin. There is a description, in 200 s'lokas, in the S'alya Parva of Mahabharata of a pilgrimage undertaken by Balarama, elder brother of Kr.s.n.a, along the River Sarasvati from Dwaraka to Yamunotri.

The oldest extant human document is the R.gveda which is a compilation of 11,000 r.ca-s perceived by hundreds of seers. An understanding of this document is fundamental to an understanding of the cultural ethos of Bharat.

R.gveda presents a world-view in allegorical and metaphorical terms perceiving an essential unity in cosmic phenomena and r.ta (a rhythm which modulates the terrestrial and celestial events alike). While the document presents the early philosophical thought related to *dharma*, it also describes the lives and activities of people – the Bharatiya. R.gveda thus presents a variegated picture covering a variety of facets of a maritime-riverine civilization, such as transport systems, agriculture, use of fire, minerals and metals to produce household utensils, ornaments, tools and weapons. Archaeologists have unearthed many examples of technology used in the days of the Sarasvati Civilization (from circa 3500 BCE to 1500 BCE). These provide evidence for the evolution of s'ankha industry in 6500 BCE, preparation of alloys such as pan~caloha, bronze, brass, pewter and bell-metal.

A dialectical continuum has existed in Bharat from the days of R.gveda and Sarasvati Civilization. The civilization constituted a linguistic area, as it is even today in Bharat. Mleccha was a language spoken by Vidura and Yudhis.t.hira as evidenced by *Mahabharata*. Mleccha were vra_tya-s who worked with minerals and metals. The semantic structures (words and meanings) of all languages of Bharat – Munda, Dravidian or Indo-Aryan categories – present an essential unity among the speakers of various dialects of Bharat. The seven volume work on Sarasvati substantially draws upon the *Indian Lexicon*, which is a comparative dictionary of over 25 ancient languages of Bharat.

Using this lexical repertoire of the linguistic area called Bharat, it has been possible to crack the code of the epigraphs of the civilization inscribed on over 4,000 objects including seals, tablets, weapons and copper plates. The epigraphs are composed of hieroglyphs (referred to as Mlecchita Vikalpa – picture writing --, one of the 64 arts listed by Va_tsya_yana).

> The code of hieroglyphs is based on rebus (use of similar sounding words and depicted through pictures) and represent the property possessions of braziers – possessions such as furnaces, minerals, metals, tools and weapons. These were also traded over an extensive area upto Tigris-Euphrates river valley in Mesopotamia and the Caspian Sea in Europe.

The tradition of epigraphy evidenced in punch-marked coins and copper plate inscriptions in the context of Sarasvati Epigraphs points to millions of manuscripts and documents remaining unexplored all over Bharat.

Ongoing projects for the rebirth of River Sarasvati has opened a new vista in water management in Bharat, which has an ancient tradition of water management exemplified by the rock-cut reservoir in Dholavira, the grand anicut on Kaveri, the step wells and pus.karin.is in all parts of Bharat.

Desiccation of River Sarasvati is a warning to us about the unpredictability of the impact of tectonics on hydrological systems sourced from the Himalayas, for e.g. the Rivers Ganga and Brahmaputra.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Conclusions

River Sarasvati is neither a legend, nor a myth, but ground-truth, a river which was flowing for thousands of years prior to Vedic times.

Bharatiya Civilization is an indigenous evolution and cultural continuity is established from the Vedic times to the present day.

For thousands of years before the days of Mahabharata War (ca. 3000 BCE), the Bharatiya had contacts with neighbouring civilizations.

The historicity of *Mahabharata* has been established making it a sheet anchoe of Bharatiya Itiha_sa. After the desiccation of River Sarasvati (finally by about 3000 years ago), Bharatiya-s moved to other parts of the world.

The metaphor of Samudra manthanam (celebrated in the *Bha_vata Pura_n.a*) is a depiction of the reality of a cooperating society which had united all the people of Bharat into life-activities including the environmentally sustainable use of natural resource offered by Mother Earth (Bhu_devi).

Sarasvati is adored in Bharatiya tradition as a river, as a mother and as a divinity – *ambitame, nadi_tame, devitame sarasvati.* This is an abiding spiritual foundation which resides in the heart of every Bharatiya.

The epigraphs evidence one of the early writing systems of the world.

The search and discovery of River Sarasvati has revealed a thread of essential unity – a bond among the people of Bharat. This has emerged from Vedic times and continues even today. This is the unity of an integral society, a resurgent nation and a unified culture which can be found in all parts of Bharat, from the Himalayas to the Indian Ocean.

Research Institutions have to be established in different disciplines of historical studies to study the manuscripts and documents in the archival collections in all parts of the country.

The initiation of a project for interlinking of rivers is a laudable, first step in creating a National Water Grid which has the potential to ensure equitable distribution of water resources to all parts of the country and to make Bharat a developed nation in 15 years' time.

> The establishment of the Water Grid is a national imperative and should be an unmotivated action (*l'acte gratuite*) devoid of political overtones.

The establishment of an inter-disciplinary Sarasvati Research Centre in Kurukshetra will help in progressing further researches on water resources management, and study of our history, heritage and culture.

Areas for further researches

Glaciological researches are needed in relation to the glacial source of River Sarasvati which is referred to as *Plaks.a Pras'ravan.a* in the ancient texts.

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Seismological studies are needed to determine the chronology of events connected with the submergence of Dwaraka, the Gulf of Khambat and other coastal regions of Bharat.

Meteorological, glaciological and seismological studies have to be related to plate tectonics – the dynamic Indian plate and the evolving Himalayas – for a better understanding of the hydrological systems, sustainability and management of a National Water Grid for Bharat.

Archaeological work on the 2,000 sites on Sarasvati River Basin have to be related to the events described in the ancient epics: *Ramayana* and *Mahabharata*

The Vedic texts, epics and Purana-s contain historical information.which can be validated through archaeological, astronomical and geographical studies.

Epigraphical and language studies in relation to the evolution and spread of languages and scripts of Bharat.

Scholars have to be encouraged to study the unexplored manuscripts lying in museums, libraries and private collections.

Researches for establishing the National Water Grid should be objective and provide a new vision to reach out the water and agricultural resources of thecountry, equitably, to all people and for the development of the nation.

****

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Index

abstract symbols, 91
Agate, 146
agriculture, 324
Akkadian, 1, 29, 52, 56, 64, 66, 86, 92, 142, 144, 146, 161, 195, 211, 243, 259, 271, 279, 282, 283, 284, 287, 303, 318, 322
Allahdino, 79, 218
Amri, 79
antelope, 29, 50, 53, 84, 90, 113, 119, 120, 121, 122, 123, 124, 127, 128, 129, 130, 148, 149, 151, 169, 172, 173, 192, 210, 216, 217, 227, 258, 276, 300, 316
Anu, 279, 285, 287
Arabia, 162
Arabian Gulf, 11, 162
Aravalli, 252
arch, 19, 61, 94, 206, 285, 298, 299, 300
Archaeological Survey of India, 17
archaeo-metallurgy, 10
archer, 66, 143, 144, 188, 206, 234, 244
architecture, 133
arrow, 32, 51, 58, 88, 125, 196, 197, 208, 212, 215, 238, 255, 279, 285, 311, 312, 313
arrowhead, 107, 196, 303
arsenic, 251, 252, 283, 300
Avestan, 5, 208
axe, 13, 29, 82, 101, 103, 104, 107, 137, 139, 149, 151, 160, 161, 184, 200, 208, 213, 220, 228, 229, 232, 236, 238, 242, 255, 271, 273, 274, 275, 276, 278, 280, 284, 288, 289, 290, 294, 296, 303, 305, 310, 314, 316, 320, 328
Bactria, 65, 79, 129, 160, 162, 163
Bahrain, 48, 49, 53, 302
Balakot, 79
Baluchistan, 62, 146, 279, 306
Banawali, 79, 267, 313
barbed spear, 57, 150
barber, 151
barley, 65, 287
bath, 183, 257
bead, 19, 56, 57, 92, 113, 141, 154, 219, 229, 239, 248, 261, 299, 321
beads, 47, 51, 92, 117, 126, 129, 218, 219, 220, 223, 229, 230, 245, 261, 262, 265, 288, 299
bed, 94, 95, 107, 137, 146, 149, 153, 176, 184, 207, 225, 241, 290, 302, 305, 310, 312, 313, 315, 316, 320, 322
belt, 125, 136, 172, 245, 253
Bha_rata, 8, 9, 10, 11, 16, 28, 86, 96, 101, 256, 272, 283, 295, 319
Bharata, 131
blade, 65, 94, 126, 154, 161, 166, 168, 180, 196, 202, 215, 229, 239, 244, 274, 275, 278, 303
BMAC, 147, 280
boar, 64, 65, 66, 82, 114, 115, 144, 147, 148, 169, 182, 191, 217, 261
boat, 144, 155, 157, 168, 185, 247, 291, 296, 305, 308, 321, 322
bone, 4, 31, 36, 37, 39, 47, 91, 92, 106, 162, 245, 269, 291, 300
boss, 67
bow, 58, 66, 83, 143, 144, 145, 152, 188, 219, 220, 238, 255, 279, 281, 285, 291
Brahmi, 14, 20, 93, 297
brass, 13, 94, 103, 104, 110, 115, 123, 126, 130, 131, 133, 138, 139, 145, 158, 160, 174, 178, 185, 198, 202, 205, 210, 238, 242, 244, 252, 255, 290, 310, 314, 315, 320, 321, 324, 328

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

brazier, 1, 22, 106, 112, 131, 133, 138, 151, 153, 174, 202, 208, 221, 224, 227, 232, 249, 259, 260, 263, 294, 328
brick, 94, 95, 112, 114, 126, 166, 176, 180, 183, 193, 253, 305
bronze, 14, 18, 19, 25, 28, 31, 37, 86, 91, 92, 94, 97, 101, 106, 107, 110, 118, 120, 121, 126, 127, 130, 131, 142, 144, 145, 163, 165, 168, 181, 185, 208, 211, 212, 232, 239, 248, 252, 255, 273, 274, 280, 285, 305, 324, 328
Buddha, 157
buffalo, 54, 57, 82, 96, 99, 100, 114, 118, 150, 169, 170, 176, 179, 191, 192, 200, 215, 217, 256, 260, 298
buildings, 287
bull, 1, 16, 29, 48, 49, 50, 51, 52, 53, 54, 56, 57, 59, 61, 66, 82, 84, 85, 90, 91, 97, 100, 118, 119, 125, 128, 136, 148, 149, 151, 160, 166, 168, 169, 170, 171, 175, 176, 177, 181, 182, 185, 186, 190, 200, 202, 210, 211, 212, 214, 215, 217, 218, 221, 222, 226, 227, 237, 239, 243, 244, 254, 260, 262, 265, 268, 269, 273, 274, 281, 282, 285, 287, 288, 294, 296, 297, 299, 301, 302, 303, 306, 309, 313, 316, 318, 320, 328
bun, 50, 57, 58, 150, 160, 161
burial, 56, 91
camel, 131
caravan, 115, 237
carnelian, 51, 129, 271, 322
carp, 287, 310, 314, 315
carpenter, 142, 151, 154, 181, 188, 202, 217, 227, 256, 257, 288, 289, 303, 308
cart, 86, 113, 139, 154, 179, 240
cattle, 101, 115, 128, 137, 140, 152, 166, 168, 181, 198, 200, 226, 241, 275, 289, 296, 297, 299, 306, 308, 315
cemetery, 51
Central Asia, 14, 65, 162, 282, 288
ceramic, 45, 91, 93, 170
Chalcolithic, 288
Chanhudaro, 79, 128, 187, 206, 219, 273, 276, 293
chert, 102, 163
chisel, 92, 130, 137, 199, 200, 220, 273, 303, 328
citadel, 80, 313
cities, 19, 93, 201, 255
city, 16, 59, 66, 88, 92, 98, 161, 169, 183, 199, 213, 243, 267, 277
clay, 53, 57, 58, 59, 60, 62, 65, 66, 82, 85, 87, 96, 112, 124, 135, 139, 142, 190, 197, 211, 218, 220, 243, 271, 274, 287, 288, 294, 328
cloak, 141
cloth, 87, 96, 114, 125, 133, 139, 141, 155, 190, 214, 243, 245, 249, 253, 260, 261, 270, 278, 284, 328
clothing, 234, 247
cobra, 171, 195, 210
coins, 19, 22, 25, 27, 132, 221, 243, 305, 322, 324
conflict, 224
cooking pot, 133, 178, 315, 328
copper, 1, 13, 14, 17, 18, 19, 20, 22, 25, 29, 30, 31, 33, 42, 51, 54, 55, 56, 60, 64, 80, 82, 83, 86, 91, 92, 93, 94, 96, 97, 98, 100, 101, 102, 104, 105, 106, 107, 109, 110, 115, 116, 118, 120, 121, 122, 123, 125, 126, 128, 130, 131, 132, 135, 136, 139, 142, 143, 144, 145, 146, 149, 151, 153, 154, 160, 161, 162, 165, 166, 174, 176, 178, 179, 183, 184, 185, 186, 190, 192, 195, 196, 198, 201, 203, 210, 211, 212, 217, 219, 220, 227, 234,

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

239, 242, 243, 248, 251, 252, 255, 259, 263, 271, 272, 273, 276, 282, 283, 284, 288, 289, 290, 296, 300, 302, 313, 316, 318, 319, 320, 321, 322, 324, 328
cotton, 160, 248
cowrie, 245
crocodile, 210, 292, 296
crown, 191, 193, 207, 256, 287
crucible, 183, 190
cuneiform, 66, 82, 86, 92, 213, 237, 242, 243, 271, 285, 319
cylinder seal, 1, 30, 31, 47, 48, 52, 62, 63, 64, 65, 66, 82, 88, 120, 135, 144, 159, 160, 163, 192, 237, 239, 294, 303, 318, 319
dagger, 29, 92, 168, 208, 278, 288
deciphering, 95
deer, 65, 82, 113, 123, 124, 130, 210, 217, 289, 292
deity, 57, 59, 61, 83, 92, 96, 116, 147, 150, 162, 169, 204, 234, 261, 296, 320
dharma, 324
Dholavira, 19, 31, 79, 80, 85, 93, 105, 181, 214, 225, 267, 292, 294, 324
dice, 31, 113, 165
digger, 130, 181, 296, 299
Dilmun, 48, 49, 82, 120, 129, 271
dog, 142, 145, 167, 181, 211, 258, 285, 287
domestic animals, 61
donkey, 253
dotted circle, 18, 31, 55, 83, 113, 129, 137, 162, 163, 174, 176, 218, 219, 223, 224, 229, 230, 260, 261, 263, 265, 267, 268, 269, 270, 290, 296, 297, 299, 308
Dr.s.advati, 323
Dravidian, 5, 16, 99, 324
drill, 142, 165, 217, 218, 219, 220, 221, 242, 259, 264, 271
drilling, 218, 219, 220
drummer, 296
duck, 183, 303
Durga, 167, 279
Early Harappan, 46, 53, 58, 79, 290
Egypt, 14, 82, 86, 91, 121, 208, 220
Elam, 82, 86, 271, 284
elephant, 53, 57, 59, 82, 83, 84, 97, 99, 100, 114, 125, 128, 135, 136, 148, 150, 151, 152, 167, 169, 191, 194, 196, 206, 207, 210, 211, 217, 218, 230, 240, 246, 294, 297, 320, 328
embroidery, 126, 141, 253, 259, 260
engraver, 64, 321
etched, 129
faience, 17, 31, 42, 45, 54, 55, 60, 61, 67, 83, 93, 95, 97, 203, 230, 239, 267, 301, 302
Fairservis, 92
farm, 195
figurine, 57, 170, 239, 288
fillet, 56, 57, 161
fish, 1, 18, 29, 41, 51, 52, 53, 56, 60, 63, 79, 82, 85, 89, 94, 99, 100, 103, 104, 107, 116, 131, 146, 149, 151, 153, 170, 177, 180, 182, 184, 192, 198, 212, 226, 232, 237, 238, 245, 261, 274, 275, 279, 281, 283, 287, 289, 290, 292, 293, 294, 295, 297, 302, 303, 305, 307, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 322, 328
Ganga, 321, 323, 324
gateway, 31, 91, 92
Ghaggar, 323
gharial, 99, 151, 152, 240, 291, 293, 294, 295, 316
glass, 117, 126, 157, 214, 230, 248, 261, 299
glazed faience, 239
goat, 50, 119, 123, 127, 135, 142, 151, 160, 167, 169, 190, 192, 193, 210,

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

215, 227, 234, 241, 276, 281, 284, 287, 289, 297, 306, 320
godess, 8, 151, 157, 205, 273, 274, 279, 284, 287, 288
gold, 18, 25, 33, 51, 56, 65, 83, 88, 91, 93, 97, 103, 105, 109, 112, 115, 122, 126, 136, 139, 141, 142, 145, 148, 153, 157, 158, 166, 168, 170, 171, 174, 179, 181, 182, 186, 188, 190, 195, 199, 202, 208, 210, 213, 219, 224, 228, 242, 244, 245, 248, 249, 251, 252, 261, 271, 273, 296, 297, 301, 302, 322
goldsmith, 13, 105, 109, 115, 131, 133, 138, 151, 152, 153, 157, 158, 172, 182, 190, 192, 195, 201, 202, 207, 208, 210, 245, 256, 261, 285, 290, 291
graffiti, 19, 93
granary, 58, 183, 307
grapheme, 17, 32, 91, 102, 118, 282, 302, 314
Gujarat, 11, 200, 219, 220, 269, 309, 323
Gujarati, 14
Gulf of Khambat, 11, 78, 225, 272, 322, 326
gypsum, 91
hammer, 137, 154, 220
Harappa, 14, 15, 16, 17, 18, 19, 31, 41, 42, 54, 55, 56, 57, 58, 59, 60, 66, 67, 79, 80, 81, 82, 91, 92, 94, 96, 98, 143, 147, 163, 169, 203, 204, 214, 226, 230, 262, 263, 265, 267, 270, 272, 273, 280, 281, 288, 301, 310, 317
hare, 29, 165, 170, 193, 240, 261
headdress, 57, 59, 61, 150, 170, 190, 194, 260, 287, 298, 299
hearth, 58, 94, 103, 107, 132, 146, 149, 153, 184, 185, 197, 224, 259, 278, 289, 290, 302, 305, 310, 312, 313, 315, 316, 320, 322
Hindu, 10, 116, 119, 208, 228, 242, 246, 255, 274, 290
hoard, 18, 27, 56, 86, 92, 289, 290, 320, 321
horned, 1, 16, 19, 29, 48, 49, 51, 52, 53, 54, 56, 57, 59, 61, 65, 80, 83, 84, 85, 90, 91, 96, 97, 99, 101, 115, 119, 125, 128, 131, 136, 148, 149, 150, 151, 152, 159, 166, 168, 169, 172, 175, 177, 185, 190, 191, 192, 193, 194, 200, 202, 206, 209, 214, 216, 217, 218, 221, 222, 226, 227, 234, 237, 239, 240, 253, 255, 256, 260, 265, 268, 269, 274, 277, 285, 287, 290, 296, 298, 302, 303, 313, 316, 318
horse, 136, 197, 214, 249, 270, 285, 287, 307
incised, 18, 42, 45, 54, 55, 56, 58, 59, 61, 65, 83, 87, 88, 91, 94, 95, 96, 121, 163, 203, 204, 267, 268, 273, 278, 283, 288, 289, 316, 319, 320
Indo-Aryan, 5, 16, 99, 324
ingot, 13, 50, 60, 94, 95, 110, 112, 118, 122, 123, 130, 135, 136, 162, 176, 179, 195, 200, 201, 229, 282, 301, 304, 305, 312, 313, 314, 318
inlaid, 91, 139, 210
inscription, 5, 17, 18, 20, 30, 47, 48, 51, 54, 56, 57, 58, 59, 60, 61, 66, 86, 88, 89, 96, 102, 121, 122, 143, 144, 162, 170, 186, 203, 212, 213, 214, 226, 234, 237, 243, 265, 271, 283, 285, 289, 301, 316, 317
ivory, 17, 55, 90, 91, 92, 162, 163, 168, 174, 177, 199, 210, 224, 226, 229, 230, 267, 268, 269, 270, 322
jackal, 86, 155, 186
jasper, 219
Jat.ki_, 174, 230

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

jewelry, 18, 56, 93, 261
Jhukar, 79, 187
Kalibangan, 46, 79, 204, 211, 267, 268, 283
Kalyanaraman, 1, 2, 3, 8, 9, 10, 12, 16
Kannad.a, 5
Kashmir, 11, 256
Kavi, 229
Kenoyer, 1, 16, 18, 19, 52, 54, 55, 56, 57, 59, 80, 81, 92, 93, 98, 163, 169, 170, 201, 203, 220, 222, 226, 229, 239, 255, 260, 267, 272, 283, 301, 306
Khetri, 252
kiln, 20, 103, 112, 131, 149, 176, 190, 192, 193, 194, 197, 210, 257, 300, 305, 306
Kish, 47, 98, 213, 288
kneeling, 83, 96, 151, 152, 161, 181, 195, 203, 204, 205, 206, 230, 291, 299
Kon
  kan.i, 5, 194, 228
Kot Diji, 58, 200, 255, 256
Kutch, 11, 78, 272
Lal, 129, 283, 320, 321
language, 4, 5, 8, 10, 14, 15, 16, 30, 47, 62, 64, 78, 80, 89, 92, 93, 99, 100, 139, 143, 181, 242, 244, 245, 252, 271, 286, 324, 326
languages, 3, 5, 8, 10, 14, 15, 16, 28, 80, 82, 92, 99, 100, 101, 217, 295, 324, 326
lapidary, 102, 218
lapis lazuli, 262, 272
lattice, 178
lead, 1, 60, 118, 131, 139, 146, 160, 165, 166, 171, 176, 194, 195, 210, 213, 243, 251, 252, 282, 296, 312, 318
lizard, 52, 53, 82, 148, 151, 152, 153, 155, 180, 202, 240, 289, 290, 291, 292, 293, 294, 322
Lothal, 55, 64, 79, 96, 127, 143, 217, 218, 219, 252, 322
Mackay, 46, 55, 96, 98, 128, 170, 187, 234, 262, 269, 293
Magadha, 20
Magan, 82, 271
Maha_bha_rata, 14, 15, 99
Mahadevan, 13, 15, 16, 17, 28, 30, 32, 51, 68, 89, 95, 98, 100, 109, 121, 128, 136, 196, 204, 205, 218, 221, 264, 267
Makran, 272
Marshall, 18, 25, 47, 55, 56, 96, 181, 214, 222, 239, 260, 269
Meadow, 16, 59, 98, 163, 169, 226, 267
Mehrgarh, 63, 79, 237
Meluhha, 78, 80, 82, 163, 271, 322
Meluhhan, 80
merchants, 93, 97, 154, 322
Mesopotamia, 11, 14, 30, 47, 48, 51, 53, 64, 65, 79, 82, 87, 91, 92, 97, 144, 160, 161, 170, 212, 220, 237, 277, 278, 281, 284, 285, 302, 303, 319, 322, 324
metal, 1, 8, 13, 15, 18, 19, 31, 33, 55, 65, 80, 82, 83, 86, 94, 97, 98, 99, 101, 103, 104, 105, 106, 107, 109, 110, 111, 115, 116, 118, 120, 122, 126, 130, 131, 135, 139, 140, 141, 142, 144, 145, 149, 153, 154, 155, 159, 160, 165, 166, 168, 170, 171, 172, 173, 174, 176, 178, 179, 180, 181, 183, 184, 185, 188, 190, 193, 195, 198, 200, 201, 210, 211, 215, 218, 220, 232, 235, 238, 239, 242, 244, 246, 248, 249, 251, 252, 254, 255, 259, 265, 272, 275, 282, 288, 290, 291, 292, 296, 297, 299, 300, 302, 303, 304, 306, 307, 309, 310,

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

312, 313, 314, 315, 316, 318, 320, 321, 324, 328
metallurgy, 10, 19, 162, 319
metals, 1, 13, 14, 22, 80, 83, 94, 97, 99, 102, 104, 107, 131, 139, 140, 146, 151, 154, 179, 180, 181, 183, 185, 190, 201, 202, 210, 211, 218, 260, 282, 296, 321, 324
mining, 252
Mleccha, 14, 15, 16, 80, 99, 123, 324
Mlecchita, 13, 14, 15, 81, 99, 324
Mohenjodaro, 14, 15, 16, 17, 18, 31, 46, 47, 79, 80, 83, 93, 96, 122, 170, 181, 189, 214, 239, 260, 262, 264, 268, 270, 276, 321, 322
molded, 54, 57, 59, 61, 91, 93, 150, 239
monkey, 63, 82, 117, 148, 152, 160, 175, 237, 238, 239, 240, 242, 275
mortar, 166
mould, 1, 45, 115, 122, 123, 131, 142, 194, 202, 211, 308, 312
Mundari, 83, 112, 113, 114, 118, 133, 142, 143, 145, 148, 154, 155, 159, 166, 171, 176, 177, 182, 183, 190, 235, 257, 279, 281, 303, 321
Nausharo, 1, 17, 19, 52, 55, 79, 91, 189, 306
necklace, 18, 98, 229, 261, 299, 321
Neolithic, 19, 91, 225, 256
one-horned, 1, 16, 48, 52, 53, 85, 90, 97, 119, 125, 128, 136, 148, 149, 151, 169, 172, 175, 214, 217, 218, 221, 222, 226, 227, 239, 253, 265, 268, 269, 285, 302, 303, 313, 318
ore, 50, 94, 105, 106, 110, 115, 118, 122, 123, 126, 144, 171, 176, 183, 194, 195, 200, 210, 227, 236, 238, 242, 244, 252, 254, 257, 282, 290, 304, 307, 314, 315
organization, 10, 16, 98, 169, 288
ornaments, 56, 224, 272, 290, 324
Oxus, 82
Pakistan, 15, 16, 17, 19, 47, 62, 63, 64, 80, 93, 170, 187, 237, 256, 260, 262, 268, 272, 295, 301
Parpola, 15, 16, 17, 28, 30, 31, 32, 46, 48, 50, 51, 53, 78, 83, 87, 89, 92, 94, 95, 96, 98, 143, 162, 169, 171, 184, 212, 233, 234, 243, 254, 256, 260, 262, 290, 308, 309, 311, 313, 319, 322
peacock, 194, 279, 283, 322
pectoral, 16
pendant, 18, 56, 57, 92, 98, 139, 181
perforated, 18, 56, 171, 181, 218, 229, 261, 289
Persian Gulf, 14, 62, 78, 82, 127, 163, 176, 254, 321
pictographic, 31, 65, 66, 67, 87, 89, 285
pipal, 59, 83, 113, 191, 193, 195, 206, 256
Pirak, 79
plant, 52, 57, 59, 62, 84, 155, 159, 160, 163, 165, 167, 194, 197, 229, 281, 300, 301, 307
plants, 82, 91, 116, 248
platform, 119, 124, 137, 151, 179, 190, 193, 194, 195, 197, 206, 213, 216, 241, 301, 305, 322
Pleiades, 157, 287
Possehl, 16, 50, 96, 212, 214, 303, 313
pottery, 19, 28, 47, 57, 59, 63, 91, 92, 171, 256, 270, 273, 280, 288, 306, 321
Priest, 209, 210, 260
punch-marked, 22, 25, 26, 27, 221, 305, 324
Punjab, 11, 131, 295, 321, 323
Puru, 279
R.gveda, 2, 8, 10, 11, 83, 94, 122, 171, 228, 279, 314, 324
Ra_ma_yan.a, 275
Rajasthan, 11, 252, 295
Rakhigarhi, 79, 81, 291

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

ram, 83, 84, 86, 100, 118, 122, 123, 135, 149, 160, 167, 200, 206, 210, 216, 217, 287, 289, 290, 296, 297, 298, 299, 308, 320
Ravi, 57, 81, 163, 272
raw material, 97, 272
rebus, 14, 15, 18, 19, 20, 28, 29, 33, 81, 83, 85, 89, 92, 94, 99, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 114, 116, 118, 122, 125, 127, 130, 136, 139, 146, 148, 153, 154, 155, 160, 164, 166, 170, 171, 174, 176, 177, 181, 182, 184, 185, 186, 188, 189, 191, 192, 193, 194, 200, 201, 210, 217, 218, 227, 229, 231, 232, 235, 238, 239, 242, 244, 254, 255, 256, 257, 259, 265, 274, 275, 279, 282, 289, 290, 292, 296, 297, 299, 300, 301, 302, 303, 306, 308, 309, 312, 313, 314, 315, 316, 318, 320, 322, 324, 328
reservoir, 181, 324
rhinoceros, 99, 100, 151, 152, 153, 182, 185, 193, 240, 294
rice, 83, 103, 112, 115, 131, 137, 155, 159, 176, 207, 213, 229, 235, 248, 250, 279, 307, 308, 313
Rojdi, 79, 158
Ropar, 14, 81
Sanskrit, 3, 5, 92, 93, 104, 228, 275, 282
Santali, 18, 19, 29, 33, 80, 83, 86, 94, 97, 102, 103, 104, 107, 110, 112, 113, 115, 116, 117, 118, 119, 120, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 133, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 153, 154, 155, 157, 158, 159, 160, 165, 166, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 186, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 205, 206, 210, 211, 212, 213, 214, 215, 224, 228, 229, 230, 232, 235, 238, 239, 240, 241, 242, 244, 248, 250, 251, 253, 254, 255, 256, 257, 258, 259, 261, 262, 268, 270, 271, 275, 278, 279, 281, 285, 289, 290, 291, 292, 294, 296, 298, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 312, 313, 314, 315, 316, 320, 322, 328
Sarasvati, 2, 3, 8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 22, 28, 31, 47, 62, 78, 80, 81, 82, 84, 87, 88, 93, 94, 96, 97, 100, 101, 120, 144, 151, 157, 190, 221, 237, 238, 243, 267, 270, 272, 274, 279, 297, 321, 323, 324, 325, 326
saw, 202, 208, 220, 241, 275, 284, 285, 294, 308
sealing, 17, 54, 58, 59, 60, 124, 243, 313
seated figure, 57, 176, 253
serpent, 84, 100, 135, 171, 179, 195, 198, 210, 211, 285
sheep, 87, 123, 130, 160, 167, 208, 210, 241, 275, 277, 289, 297, 320
shell, 17, 53, 63, 91, 92, 96, 107, 140, 141, 172, 178, 208, 218, 219, 220, 237, 243, 244, 245, 262, 264, 272, 302
ship, 121, 237, 305, 308, 322
shipping, 237
Shortughai, 129
Signboard, 80
Silver, 55, 65, 94, 251
Sindh, 28, 31, 62, 88, 96, 100, 144, 237, 243, 274, 280
Sindhi, 5
snake, 65, 82, 83, 100, 127, 146, 155, 160, 171, 183, 192, 195, 210, 246, 273, 281, 282, 285, 287

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

soma, 83, 148, 153, 170, 171, 244, 261, 301, 314
spear, 20, 29, 57, 131, 140, 150, 153, 169, 170, 171, 196, 197, 198, 200, 208, 215, 292, 303
spearing, 57, 150, 168, 169, 215
spotted, 113, 123, 228, 302
squirrel, 18
standing person, 62, 128, 136, 137, 159, 168, 177, 238, 239, 255, 299, 300
steatite, 17, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 59, 60, 61, 63, 64, 65, 67, 83, 91, 117, 127, 129, 171, 203, 229, 260, 262, 270, 272, 289, 294, 313, 317
stone bead, 19
stoneware, 93
stoneware bangle, 93
stool, 25, 57, 59, 61, 83, 189, 192, 193, 195, 197, 199, 301, 307
storage jar, 1, 52, 58, 93, 306
storehouse, 20
Sumerian, 47, 48, 50, 66, 80, 81, 86, 88, 89, 92, 98, 127, 192, 213, 243, 271, 275, 276, 288, 294, 319
Susa, 46, 47, 85, 86, 87, 168, 189, 191, 256, 270, 287
Sutlej, 14, 81, 323
svastika_, 16, 89, 109
symbols, 16, 17, 22, 23, 25, 26, 31, 32, 51, 57, 58, 67, 82, 84, 91, 92, 93, 100, 121, 235, 273, 279, 285, 288
tablets, 14, 17, 18, 30, 31, 33, 34, 35, 36, 37, 38, 39, 40, 45, 54, 55, 56, 57, 58, 59, 60, 61, 66, 82, 83, 85, 87, 89, 91, 92, 94, 95, 96, 97, 98, 120, 125, 133, 137, 143, 144, 145, 165, 169, 174, 180, 194, 196, 201, 202, 203, 204, 205, 234, 263, 267, 271, 286, 292, 299, 305, 310, 312, 317, 324
Tamil, 3, 5, 89, 159, 163, 167, 321
Taxila, 25, 26, 147
Telugu, 3, 5, 139, 159, 181, 242, 249, 279, 307, 321
temple, 57, 96, 97, 111, 129, 140, 147, 158, 168, 197, 206, 282, 287, 298, 301
Tepe Yahya, 14, 82, 85, 124, 171, 278, 282, 289
terracotta, 19, 31, 42, 45, 52, 54, 55, 56, 57, 59, 83, 91, 92, 93, 95, 151, 169, 170, 192, 222, 290, 301, 313
terracotta tablet, 42, 55, 56, 57, 59, 91, 169, 222, 301
throne, 52, 59, 83, 192, 285, 290
tiger, 29, 53, 57, 59, 80, 82, 83, 84, 86, 99, 100, 109, 114, 115, 131, 135, 139, 146, 150, 151, 152, 154, 155, 168, 169, 170, 172, 173, 185, 186, 193, 194, 205, 206, 210, 211, 217, 238, 239, 240, 241, 278, 280, 296, 300
Tigris, 14, 78, 82, 144, 176, 213, 254, 288, 324
tin, 101, 102, 104, 107, 110, 114, 118, 120, 121, 122, 123, 126, 127, 130, 131, 139, 142, 145, 146, 148, 149, 159, 160, 163, 164, 165, 166, 179, 185, 188, 192, 195, 196, 201, 210, 213, 237, 239, 242, 251, 252, 255, 256, 265, 280, 282, 283, 296, 297, 312, 328
tokens, 65, 66, 86, 87, 92, 93, 96
tools, 15, 22, 28, 85, 92, 93, 97, 99, 102, 154, 174, 213, 217, 219, 220, 244, 265, 272, 273, 275, 283, 288, 320, 324
tortoise, 143, 172, 188, 245, 285
traders, 97, 215
transport, 60, 324
tree, 13, 20, 28, 29, 46, 57, 59, 60, 63, 82, 83, 94, 96, 110, 113, 124, 131, 140, 144, 147, 148, 150, 151, 159, 160, 161, 163, 166, 167, 169, 176,

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

184, 187, 194, 205, 206, 229, 237, 241, 248, 254, 277, 279, 287, 291, 292, 299, 300, 301, 302, 304, 306, 307, 316
trefoil, 53, 82, 141, 210, 259, 262, 296, 297, 302
triven.i, 323
Turkmenistan, 65, 78
turquoise, 280
unguent, 163, 167
Unicorn, 58, 66
United Arab Emirates, 162
Ur, 14, 47, 49, 50, 51, 52, 53, 57, 66, 79, 82, 97, 120, 159, 160, 176, 184, 187, 189, 212, 213, 219, 237, 243, 253, 254, 270, 271, 275, 276, 281, 288, 302
Vats, 14, 16, 61, 91, 94, 147, 203, 262, 268, 280, 281
vessels, 45, 93, 97, 122, 165, 166, 176, 179, 180, 184, 196, 199, 201, 251, 253, 254, 321
Vindhya, 226
votive, 96
war, 188, 194, 208, 222, 224, 287
weapons, 14, 19, 31, 65, 82, 85, 92, 97, 101, 142, 178, 200, 208, 213, 218, 228, 229, 238, 239, 244, 265, 274, 275, 283, 285, 309, 324
weaving, 133
weights, 49, 91, 92, 102, 123, 162, 210
wheat, 131, 286
Wheeler, 96
wild animals, 82, 200
workshop, 19, 60, 61, 92, 97, 103, 105, 106, 113, 115, 125, 131, 140, 150, 151, 153, 154, 158, 172, 184, 193, 197, 200, 203, 210, 217, 231, 256, 298, 299, 301, 302, 309, 313, 315, 316, 328
worship, 83, 261, 279
writing, 8, 10, 12, 15, 16, 18, 19, 20, 54, 57, 58, 66, 80, 81, 82, 84, 85, 86, 87, 88, 89, 91, 92, 93, 95, 98, 104, 154, 175, 181, 237, 241, 242, 243, 283, 286, 324, 325
writing system, 8, 10, 12, 16, 18, 19, 20, 58, 80, 81, 82, 84, 85, 86, 87, 88, 89, 91, 92, 93, 95, 104, 181, 237, 325
yajn~a, 229, 261
Yamuna, 78, 323
yogic, 57, 59, 61, 96, 191, 193, 256
Yudhis.t.hira, 14, 15, 99, 324
Zebu, 29

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

End Notes

[1] If it is a skull, it could connote, man.t.ai = skull (Ta.)
man.d.a_ = warehouse, workshop (Kon.lex.)

[2] **karat.i;** 'elephant'; rebus, kharad.e 'account':

karad.u, kard.u, kharad.e = rough, as an account; kharad.e_m a rude sketch (M.); kha_tkarad.a_ a daily account, a day-book (Te.); kharad.e_mid. (M.); karad.a_ stout, as paper (M.); kharad.a_ (Te.); karad.e (Ka.)(Ka.lex.)

karad.e = an oblong drum beaten on both sides (Ka.lex.) karad.imeyita_ye = a hairy man; kara_d.i = a class of Mahratta brahmins (Tu.lex.)

[3] Substantive: *t.a_n:gi* stone chisel (A.); *t.en:goc* = small axe (Santali) *tega* 'a cutlass, scimitar' (Santali) *tah'nai* 'to engrave' (Kuwi)(DEDR 3146).
Substantive: *ten:* 'to weave'; *tetenic* 'a weaver'; *kicricko tena* 'they weave cloth' (Santali)
*t.he~ga_* = stick
Glyph: *ten:go*, *ten:gon* = to stand, upright position (Santali)
Glyph: *ten:gra hako* ' a species of fish' (Santali)
Glyph: *t.en, tec* 'used with the numeral one (mit) to form the indefinite article a or an; a single animal or thing'; *mitt.en* 'one individual'; *mitt.en hor.e calak kana* 'a man is going' (Santali)

[4] Glyphs: neck; bull, hoof, to copulate.

dhakuc = to have sexual intercourse with, to copulate; to shake the loins (Santali.lex.) d.haka, d.haklau = to push, to thrust (Santali.lex.)

d.ok 'neck' *dhakuc* 'to copulate', *d.ekka* 'hoof' (Te.Nk.Kuwi); *d.eka* (Kond.a)(DEDR 2970), *dega* to run, jump, leap (Kui*); d.egna_* to leap, jump (Kur.)(DEDR 2971), tagulu 'to have sexual intercourse with' (Ka.)(DEDR 3004); rebus: *dok* 'possessions, occupancy'
d.an:gra 'bull'; *d.han:gar* 'smith'; *adar, adar uric* 'breeding bull'; *aduru* 'native metal.

[5] Alternative homonyms: **bar, barea** 'two' (Santali); rebus: **ba~r.ia~** = shopkeeper, pedlar (Santali)

[6] kasera_ worker in pewter (P.Bi.H.); kasero maker of brass pots (N.); ka_m.syaka_ra worker i bell-metal or barss (Ya_jn~.com.); kam.saka_ra (BrahmavP.); kasa_r = maker of brass pots (N.); ka~ha_r worker in bell-metal (A.); ka_sa_ri = pewterer, brazier, coppersmith (B.); ka~sa_ri_ (Or.); kasa_ri_ maker of brass pots (H.); ka~sa_ro, kasa_ro coppersmith (G.); ka~_sa_r, ka_sa_r worker in white metal; ka_sa_rd.a_ contemptuous term for worker in white metal (M.); kasau~r.i_ cooking pot (N.); ka~_sa_l.u~ large bell-metal cymbals (Or.); ka~_su~ bell-metal (OG.); ka~_sa_l. large cymbal (M.); ka~sa~_d.i_, ka_sa~d.i_ metal vessel of a particular kind (M.) kam.sa metal cup (AV.); bell-metal (Skt.); bronze dish (Pali); kan~jho bell-metal (S.); ka~_h gong (A.); ka~sa_ big pot of bell-metal (Or.); ka_so bell-metal tray for food, food (OMarw.); ka~_sa_ cymbals (G.); kaso_t. metal pot (Wot.); kam.sia_ a kind of musical instrument (Pkt.); kenzu clay or copper pot (K.); ka~_hi bell-metal dish (A.); ka~_si_ bell-metal cymbal (G.); ka~_siyo open bell-metal pan (G.) **kas-kut.** = metal alloy (brass or bronze) (N.) kan~cu = bell-metal, bronze, a hard alloy consisting usually of about three to four parts of copper to one of tin (Te.lex.) kan.sa_ro (cf. ka_m.sum fr. Skt. ka_m.sya bell-metal + ka_ra worker) a copper-smith (G.lex.) ka~_se~ bell- metal (M.); bronze (Kon.); ka_m.sya made of bell-metal (Ka_TyS'r.); bell-metal (Yajn~.); cup of bell-metal (MBh.); ka_m.syaka bell-metal (Skt.); kam.sa (?) bronze (Pali); bell-metal, drinking vessel, cyk bal (Pkt.); ka_sa id. (Pkt.); ka~_ja_ adj. of metal; ka_sa_ jar (L.); ka~_so bronze, pewter, white metal; kas-kut. metal alloy (N.); ka_h bell-metal (A.); ka~_sa_ (B.Or.Bi. Bhoj.H.); ka~sa_ (Or.);

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

ka_s (Bhoj.); ka_s (H.); ka~_su~ (G.); kasa (Si.) ka~_iha~_ bell-metal (O.); ka~_ssi_, ka~_si_ (P.); ka~_si_ (H.)

[7] *kasis* iron sulphate (Santali) *kaci* = scissors (Sh.); kocu = betelnut scissors (K.); kaciya_ = sickle (N.); ka_si (A.); ka_ci (B.); kacia_ = big scythe (Or.); kaciya_ toothed sickle (Bi.); kicca_ = cutting (Pkt.) *ka_yppu* hard inferior iron (Ga.); *ka_ypu* inferior iron (Ma.)(DEDR 1465). *ka_s* to be lit (as fire), burn; *kasis* to light (lamp, fire)(Kond.a); *kacay* id. to light (lamp)(Pe.); *hiccu kahinomi* we kindle fire (Kuwi)(DEDR 1090). kacan-ai censer (Ci_vaka. 2140)(Ta.lex.)

[8] kar-i to chew, eat by biting or nibbling (Ta.); kar-uvu (kar-uvi-) to nibble as a rat (Ta.); kar-ur.. bridle, bit (Ta.); kar-ampuka to nibble, gnaw (Ma.); kajepuni to chew, husk with the teeth or beak (Tu.); kar-acu to bite, gnaw (Te.)(DEDR 1390). kaccuni to bite (Tu.); kacc id. (Kol.Pa.); to sting (Pa.Ga.)(DEDR 1097). Itch: kajji, gajji scab, itch (Ka.); kajju itch (Ka.); kajji itch (Kod..); gajji itch, scab (Tu.Te.); kasi itching, desire (Te.); khaj itch (Nk.); kajra id. (Pa.); kajra ringworm (Go.); gajji, gajju itch (Go.); kusee id. (Go.); gazi id. (Kond.a); kasa the itch (Kui); khasra_ id. (Kur.)(DEDR 1104). Itch, measles: khasa itch, scab (Skt.); khahi, khahi_ itch (S.); khas'a (Or.); khas itch, scab (G.); kas itch, skin disease (Si.); khasu itch (Pkt.); khahu, khahuwa_ adj. (A.); khasu (B.); khassar itching (L.); khasra_ smallpox (P.); scab, measles (H.)(CDIAL 3854). kharju itching, scratching, scab (Skt.); khajju_ (Pkt.); khajju (Pali); xanj (Gypsy); khazu_ (Sh.Dardic); kha_ji (S.Ku.); kha_j (P.WPah.H.M.); khaj (G.); khajuri_, khujl.i_ itch, prickly heat (G.); khajuli_, khujli_ mange (H.); khujuri, khujul.i itch (Or.); khajjati is itchy (Pali); xanj (Gypsy); khazoiki to itch (Sh.Dardic); kha_oja_ to scratch (B.)(CDIAL 3827). kacchu_ itch, scab, cutaneous disease (Sus'r.); kacchu (Pali); kacchu_, kacchu (Pkt.); ka_chu (Or.); kas (Si.)(CDIAL 2621). kacchur affected with itch (Ka_s' on Pa_n..); kacchula (Skt.); kacchuria envious (Pkt.); ka_chura_ suffering from itch (Or.); kacchula attacked by itch; kacchulla (Pkt.)(CDIAL 2620).

[9] Alternative homonyms: **er-r-a** = an earthworm; **era** a bait, food (Te.lex.) [Note. The earthwork flanked by two antelopes on a Lothal Persian Gulf seal].

Rebus: **ere** 'a dark-red or dark brown colour, copper' (Ka.); **eruvai** copper (Ta.)(DEDR 817). **mlekh** = antelope; **melukka** = copper. What is depicted may be Meluhha copper.

[10] Homonyms: **t.ot.ha** = neighbourhood, vicinity; non t.ot.hare do banukanan: = there is none in this neighbourhood (Santali) **tot.t.i** enclosure for selling timber, fire wood; **small village** (Tanippa_. 8,142,37)(Ta.lex.) ton.t.iyo_r the Cholas (Cilap. U_rka_n.. 107); the Cheras (Patirrup. 88)(Ta.lex.) tot.t.iyan person of a Telugu caste of cultivators, settled in the western portion of the Madura district, who assume the title of Na_ykkar (E.T.)(Ta.lex.)

tun.d.u – fragment, piece (Ka.); tun.d.u piece, slice (Te.)(DEDR 3310).

Insignia of kings: **to_t.t.i** an insignia of kings (Ta.lex.) Authority: **to_t.t.i** authority (Paripa_. 8,86)(Ta.lex.) to_t.t.i watch, guard (Patir-r-up. 25,5)(Ta.lex.) ton.t.u service (Ta.lex.)

[11] to_t.t.i elephant hook or goad (Man.i. 27,47); sharp weapon planted in the ground to keep off enemies (Tol. Po. 65, Urai.)(Ta.lex.) to_da driver (RV.); to_daga one who hurts (Pkt.)(CDIA 5969). Image: elephant hook: do_n.t.i long pole with hook to pluck fruit (Tu.); **do~_t.i** long pole with hook for cutting off fruit from high trees (Te.); to_t.t.i elephant hook or goad, hook, clasp, sharp weapon planted in the ground to keep off enemies (Ta.); hook for driving an elephant, hook for plucking fruit (Ma.); to_t.t.uka to pluck fruit with a to_t.t.i (Ma.); do_t.i, lo_t.i pole with a hook for plucking fruit, gathering flowers (Ka.); to_t.al bamboo rake (Pa.); t.o~_r.na_ to hook in; t.o_r.o~_ a pole with an iron hook or branch curved down at one extremity; tu_r.si_ a variety of the native rake or t.o_r.o~_ (Kur.); t.o_r.o_ a long stick with an iron hook (Kur.)(DEDR 3547). tur-at.u a hook, (Ma.); tor-ad.u crook, hook, crooked instrument for taking down fruits from trees (Ka.)(DEDR 3366). tur-at.t.i, tur-at.u, tur-o_t.t.i iron crook, elephant goad, pole with iron hook to pluck fruits, entanglement (Ta.lex.); cor-at.u a rod for plucking coconuts (Ta.)(DEDR 3366).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

[12] Homonyms: **kha_siyum** = a double bag to load a donkey with (G.) ka_sad (Arabic) a messenger, a carrier; a runner; ka_sadiyum = serving as a messenger, carrying a message (G.) kaccha, kaccho = a piece of cloth worn round the loins (Dh. Des. kaccha_ fr. Skt. kaks.a, kaks.a_, kaccha 'the hem of a lower garment tucked up into a waistband'] (G.) kaso = to plait, a frill, a plait; kaskasao = to tighten, to pull tight, pull together; kaci, kacni = a piece of cloth worn round the loins as a skirt; kaci, kaca = a piece of cloth worn round the loins (Santali) kaccai = girth, girdle; kaccu = belt, girdle (Ta.); **kacca** = girdle, waist-belt, long cloth (Ma.); kacce = end of lower garment gathered up behind and tucked into waistband (Tu.)(DEDR App. 20; CDIAL 2592; Skt. kaks.ya_; cf. Pali. Pkt. kaccha_). Kan~cip (kan~cit) to fasten bullock to yoke (Pa.); kaccu to join (Ka.); gac- (-c-) to tie, bind (Pe.)(DEDR 1099). Kaccu = a kind of corset worn by Indian women in ancient times (Ta.); bodice to confine the breast (Ma.); Skt. kan~cuka (DEEDR 1098).

kars.a = gold coin (Vedic) **kasa** = quality of gold or silver (as determined by rubbing it on a touch-stone); kas. To rub, to test (Skt.); kas = pith (Arabic); kas = remunerativeness (of a trade)(G.) kasan. = rubbing, testing; kasan.uvum = to mix by gradually rubbing the ingredients together, to mix by rubbing (G.) kasot.i_ (kasa 'rubbing' + vr.tti 'a circle') a touchstone, generally round in form; making a trial, ann experiment (G.) kasabi_ = an artist, an artisan; adj. skilful, clever (G.) kasab (Arabic) a business, a trade, a profession; conversancy in an art, proficiency; an artifice, a device (G.) kasa_ya, kasa_ba a butcher (Ka.); kasa_i_ (M.)(Ka.lex.) kaca_ppu slaughter of animals for food; butcher (Ta.); kassa_b (U.)(Ta.lex.)

kasi_do (Persian kas'i_dan to draw) embroidery; a piece of brick or tile burnt in fire and turned hard (G.) kaja (kaji-) to be congealed, solidified by growing cold; ganja (ganji-) to solidify, coagulate, become solid (Kui); kajali = to be congealed, become curdled (Kuwi)(DEDR 1102). kas- = to be lit (as fire), burn (Kond.a); hiccu kahinomi = we kindle fire (Kuwi)(DEDR 1090).

[13] **kra_d.i** (? for kr.a?li, gla'li large axe (Kuwi); kut.ha_ra, kut.ha_ri (Beng. Or. forms have l for r)(CDIAL 3244; cf. Burrow, *BSOAS* 35.541).**kut.a_ri, ko_t.a_ri, ko_t.a_li** axe (Ta.); ko_t.a_li, ko_t.a_l.i id. (Ma.); kod.ali (Ka.); kod.ari, kud.ari (Tu.); god.d.ali, god.d.eli, god.d.e_li, god.d.e_lu, god.ali (Te.); golli, goli_ (Kol.); ghol.i (Nk.); kod.li (Nk.); god.el (Go.); gor.el(i) (Kond.a); ku_r.el (large variety axe)(Pe.)(DEDR App. 32).

kr.a_d.i, kra_nd.i tiger, leopard, hyena (Kui); khar.yal, kariya_l panther (Go.); karad.a tiger (Pkt.); khar.eyak panther (Nk.); ked.iak tiger (Kol.); kr.ani tiger; kla_'ni leopard, tiger (Kuwi); kr.a'ni (pl. -na) tiger (Kuwi)(DEDR 1132). ko_-n.a_y < ko_l. + na_y Indian wolf; male jackal (Ta.lex.) kat.a_s'ia_ fierce like a wild cat (Or.); kha_t.a_s civet- or pole-cat (B.); civet cat (H.); kat.a_s, kat.a_r id. (H.); kat.a_s'a wild cat, civet (Or.); khat.t.a_s'a civet-cat (Skt.)(CDIAL 3780). ka_t.an tom-cat, male tiger, wild hog (Ma.); kat.uvan- tom-cat, male monkey (Ta.); kar.vn tom-cat (Ko.); kan.t.a male cat (Ka.); gad.o, gad.a-berge a wildcat (Malt.)(DEDR 1140). Image: male cat; male animal: gan.d.u male of the lower animals (Te.); kan.t.an the male esp. of cat (Ta.); gan.t.e, kan.t.e male cat (Tu.); kan.d.e male (of dogs and other animals, mostly wild; not of cats) (Kod..)(DEDR 1173); kuttiri civet cat (Tu.); kotti male or female cat (Ka.); kwat-y cat (To.); kor-r-an tomcat, boar, ram (Ta.)(DEDR 2170). kid-en contraction of kina:n a tiger, panther (Santali.lex.)

[14] In the Babylonian Talmud (+2nd century), asemon is a commonly used word referring to bullion (gold, silver or mixed). Leiden X papyrus (ca. +3rd century) says: "no.8. It will be asem, (i.e. electrum, an alloy of gold and silver) which will deceive even the artisans (a tin-copper-gold-silver alloy); no.12. Falsification of gold (a zinc-copper-lead-gold alloy)..." (Needham, Joseph, 1971, ***Science and Civilization in China***, Vol. 5, Part II, pp. 18-21). Asem denoted the natural alloy of silver and gold; it also meant any bright metal made with copper, tin, lead, zinc, arsenic and mercury. Twelve or thirteen different alloys were called asem. (ibid., p. 45). 'The existence of this alloy (assem) may have been the original cause for the suggestion of transmutation

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

since by adding silver to it, one would get a metal nearly identical with the crude silver from the mine; and by adding gold, something indistinguishable from gold. [The paucity of the Egyptian language may perhaps have been responsible for a confusion. Gold was the 'yellow metal', and the alloy produced was also a 'yellow metal'.]' (Hopkins, A.J., 1967, ***Alchemy***, pp. 103-4).

[15] karmaka_ra = labourer (Pa_n.ini's As.t.a_dhya_yi: ka_rukarma = artisan's work (Arthas'a_stra : 2.14.17); karma_nta = a workshop or factory (Arthas'a_stra : 2.12.18, 23 and 27, 2.17.17, 2.19.1, 2.23.10). **kamaru** to be singed, burnt or scorched (by the sun, by fire)(Ka.); kamaru, kamuru, kamalu (Te.); kamarike, kamarige = the state of being singed etc.; kamaru, kanaru, kamara, kamut.u, kavut.u, kavuru, gavulu = id. (Ka.) (Ka.lex.) **kamar** = a blacksmith; rana kamar, the ordinary blacksmith in the country (rana is their caste or tribal name); saloi kamar, a kind of blacksmith. Kamar kami mit bar hor.ko cet akata = a few Santals have learnt blacksmith work (Santali. Bodding). Kambru = a blacksmith; ale t.hen bar or.ak kambru menakkoa = two families of blacksmiths live with us; kambru t.hene sen akana = he has gone to the blacksmith (Santali.Bodding). **karuman-, karumakan-** blacksmith (Ta.lex.) **kammam** = kammiyar tor..il (i.e. work of kammiyar or kamma_l.ar: kan-n-a_r, kollar, cir-par, taccar, tat.t.a_r); kammiyanu_l = cir-panu_l, i.e. book of sculpture (Ta.lex.) **kammara** = the blacksmith or ironsmith caste; kammaramu = the blacksmith’s work, working in iron, smithery; kammarava_d.u, kammari, kammari_d.u = a blacksmith, ironsmith (Te.lex.) kammar-a, kammaga_r-a = blacksmith (Ka.lex.); kamma_l.a = an artisan, an artificer; a blacksmith, a goldsmith (Ka.Ta.Ma.); a goldsmith (Ka.lex.) **kammara** = the blacksmith or ironsmith caste; kammaramu = the blacksmith’s work, working in iron, smithery; kammarava_d.u, kammari, kammari_d.u = a blacksmith, ironsmith (Te.lex.) **kamba_r-a** = blacksmith; kamba_r-ike, kamma_r-ike = a blacksmith’s business (Ka.lex.) kama_r (Or. kamha_r, toil) syn. of **bar.ae**, blacksmith. This term seems to be applied especially to the blacksmiths of Gangpur, who, though of Mund.ari race like the lohars of Biru, Barway and other Oraon parts, are considered outcasts by the latter because they use tanned hides for their bellows. (Mundari.lex.) kambru = a blacksmith. Ale t.hen bar or.ak kambru menakkoa = two families of blacksmiths live with us; kambru t.hene sen akana = he has gone to the blacksmith (Santali.lex.Bodding) **kambru guru** = the reputed original teacher of the ojhas, a mythical teacher of charms and incantations, as also of medicine. Acc. To one form of the Santal traditions the person who taught the women witchcraft was Kambru; acc. To another, it was Maran buru. It is not possible to decide whether there has been an old sage of this name; or whether it should be understood as a person from Kamrup; the Santal traditions may be understood both ways (Santali.lex.Bodding). kamar = a blacksmith, a semi-hinduized caste; kolhe kamar, a Kolhe blacksmith and iron-smelter; lohar kamar, a caste of blacksmiths that live more in conformity with Hindu caste rules (do not eat meat, do not drink beer; rare in the Santal country); rana kamar, the ordinary blacksmiths in the country (rana is their caste or tribal name); saloi kamar, a kind of blacksmith. Kamar kami mit bar hor.ko cet akata = a few Santals have learnt blacksmith work. The rule among the Santals is that a village (or several villages) keep a blacksmith who does all repairs to agricultural implements free of charge, but receives twenty seers of paddy and one winnowing-fan full of Indian corn cobs and two sheaves of pady for each plough; to make a ploughshare he is paid for the iron; to put teeth on a sickle he gets two seers of paddy, and he is also paid half a seer of rice from each house at the Sohrae. He is paid for whatever else he makes new; kara era, the wife of a blacksmith (Desi kamar; H. karmka_r; B. ka_ma_r); kamari = the work of a blacksmith, pay for such work (Santali.lex.) karma_rud.u a blacksmith, an artisan (Te.lex.) kamarsa_ri_ smithy (Mth.); kamarsak_yar (Bi.)(CDIAL 2899). 2104.<u>Workshop</u>: **kamhala** workshop (Si.); kammala smithy (Si.); kammasa_la_ (Pkt.); karmas'a_la_ workshop (MBh.)(CDIAL 2896). cf. karuman-, karumakan- blacksmith (Ta.lex.) <u>Blacksmith; labourer</u>: kamarsa_ri_ smithy (Mth.); kamarsa_yar id. (Bi.)(CDIAL 2899). karuman- blacksmith (Ta.); karu-makan- id. (Kampara_. Pampa_. 37)(Ta.lex.) **karma_ra** blacksmith (RV.); **kamma_ra** worker in metal (Pali); kamma_ra, kamma_raya blacksmith (Pkt.); kama_r (A.); ka_ma_r (B.); kama_ra blacksmith, caste of non-Aryans, caste of fishermen (Or.); kama_r blacksmith (Mth.); kam.bura_ (Si.)(CDIAL 2898). karmakr.t performing work, skilful in work (AV.); one who has done any work (Pa_n..); workman (Skt.); kam.bul.a doing menial work (Si.)(CDIAL 2891). karmaka_ra doing work without wages (Ka_s'.); karmaka_raka one who does any work (Pa_n..); kammaka_ra hired labourer, workman (Pali); kammaga_ra servant (Pkt.); kamma_riya_ female servant or slave (Pkt.); ka_mar slave (Sv.); kama_ra_ servant (L.); kama_ro slave (Ku.N.)(CDIAL 2888). karmakara workman, hired labourer (MBh.); kammakara (Pali); kammayara servant

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

(Pkt.); kamera_ hired labourer (H.); kam.buranava_ to serve as a menial or slave (Si.)(CDIAL 2887). karmaka_ra_payati causes to work as a servant (Skt.); kama_ra_in.u to cause to work (S.)(CDIAL 2889). ka_rma active, laborious (Pa_n..); kamma connected with work (Pkt.); ka_mu, ka_mo slave (K.); ka_mma~_, ka_ma_ farm servant (P.); ka_ma_, ka_mo servant (WPah.)(CDIAL 3074). ka_rmika engaged in action, name of a partic. Buddhist sect (Ya_j.); Public officer: ka_mi_ public officer (S.); servant (WPah.)(CDIAL 3076). Work: karman act, work (RV.); kamma (Pali); **kramam.,** kramane, kam.ma (As'.); kama (NiDoc.Si.); kamman, kamma, kamma_ (Pkt.); kam work, esp. smith's work (Gypsy); ga_m (Shum.Gaw.Bshk.); kam (Wot..K.); krum (Kal.); korum (obl. kormo)(Kho.); kam work, thing, booty (Gypsy); ka_m (Mai.Tor.Ku.); id. (N.A.B.Mth.Bhoj. H.Marw.G.M.); keram (Sv.); krom (Sh.D..); kom (Sh.); komu (K.); kamu (S.); kamm (L.P.WPah.); ka_ma (Or.Konkan.i); ka_mu (Aw.); ka_mu~ an office, administration (G.); krem, kam, klem (Ash.); s.lam (Ash.Wg.); kram (Dm.Tir.Phal.); la_m, s.am, kur.u_m, ga_m, plo_m (Pas'.)(CDIAL 2892). Fatigue: s'rama labour (RV.); fatigue (S'Br.AV.); sama fatigue (Pali); samam. energy (As'.); sama fatigue, effort (Pkt.); seu~ worry (WPah.); mehe-ya, me_-ya work, service (Si.)(CDIAL 12683). sammati is weary (Pali); s'ramyati is tired (RV.); sammai (Pkt.); s'amu_na to become tired (D..); s.omoiki, s.omo_nu (Sh.)(CDIAL 12693). santa tired (Pali); s'ranta wearied (RV.); sam.ta (Pkt.); s'a_ndn.u to tire (WPah.)(CDIAL 12692). Labourer: ka_mat.h, ka_mi_t. busy, diligent (M.); karmis.t.ha very active (Skt.)(CDIAL 2901). kama_t.hi_, kamet.hi_ beating (P.)(CDIAL 2890). ka_ma_t.t.i labourer, one who works with a hoe, digger of earth (Ta.Ma.); ka_ma_t.i (Te.Ka.); ka_ma_t.e (Tu.); ka_ma_t.hi (M.)(Ta.lex.) kamaveti causes to work, works (NiDoc.); kamma_ve_i earns, works (Pkt.); kama~_wun to work, earn, smelt (metal)(K.); kama_in.u to work, earn, slaughter (S.); kama_van. to work, earn (L.); kama_un.a_ (P.); kuma_n.a_ (WPah.); kamu_n.o to work, cultivate (Ku.); kama_unu (N.); ka_ma_na to earn, shave (B.)[cf. kammai does barber's work (Pkt.); kramoi_ki to use, employ, spend (Sh.)(CDIAL 2894)]; kama_iba to work, earn (Or.); kama_eb to serve, weed (a field)(Mth.); kama_vai earns (OAw.); kama_na_ (H.); kama_vvu~ to help to earn (G.); kama_vu~ to earn (G.); kama_vin.e~ (M.)(CDIAL 2897). kramo_nu hardworking; labourer, farmer (Sh.); kamun.a artisan (Si.)(CDIAL 2893). kra_mi_n low-caste labourer such as a D.om (Sh.); karmi_n.a competent (S'Br.); kami_n. labourer (man or woman)(WPah.); ka_min.a_ labourer (MB.)(CDIAL 2902). kammika overseer (Pali) kammi, kammia industrious; evildoer (Pkt.); ki_yema blacksmith (Pr.); ki_ma slave (Pr.); kami_ labourer (S.); kammi_ village labourer, menial (L.P.); ka_mi blacksmith (N.); ka_mi_ day labourer (Or.); industrious (H.M.); ka_mia_ servant who works in repayment of interes on money borrowed by his master (Or.); kamiya~_ agricultural labourer who works on advances (Bi.); ka_miya_ labourer (H.); kami artificer (OSi.); kamiya_ worker (Si.); ka_min.i female labourer (Or.); kamyulu farm labourer who lives in (K.); kamilo ant (N.); kamila_ useful (A.)(CDIAL 2900). **ka_ma_t.i_** a caste of Hindus who are generally labourers and palanquin bearers (G.); komat.i_ (M.)(G.lex.) ka_ma_t.a = labour or work (for wages)(Ka.); ka_ma_t.i, ka_ma_t.a = a day-labourer (Ka.M.Te.Ma.Ta.); a house-servant (M.)

[16] **bod.e** = an inferior kind of han.d.i (liquor); bodoc mela, bod.oc sod.oc = the liquor obtained by squeezing the malted grain, and being refuse is of an inferior quality; bod.oc han.d.i = liquor obtained by pouring water on the malted grain and squeezing it (Santali.lex.)

[17] Homonym: **ka~t.a** = a hook; **kat.a** = a pit saw (Santali.lex.) **kat.a kat.i** = cutting, to slash, kill; kat.ao = to cut (Santali.lex.); kat.aha = fierce, ravening; applied also to any cutting instrument used to kill an animal with; den, kat.aha odoktape, bring out your cutting instrument (to kill the goat with)(Santali.lex.) khat., khat. marte = with one blow, or with one cut; khat. menteye get topakkeda, he cut it right through with one blow; khar, khar marte = sharp[; to whish as when cutting with any sharp instrument (Santali.lex.) khad.u_ra = swing (AV 11.9.6) (Vedic.lex.)

[18] Alternative homonyms: bed.a hako = a fish (Santali) Rebus: **bed.a** 'hearth' (G.) **hako** 'axe' (Santali)

[19] Alternative: **kut.hi** = an earthenware barrel-shaped receptacle for storing paddy (Santali.lex.Bodding) **kut.hi** = a receptacle in which rice is stored (Santali.lex.) **kut.i** = a vessel with openings used for fumigations (Ka.lex.) **kun.d.i** = a student's water-pot, made of hollow coconut etc.; kun.d.ike, gun.d.ige = a waterpot

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

(Ka.lex.) **kun.d.i_, kun.d.a_** = pot (Pkt.lex.) kun.d.a = bowl, waterpot (Ka_tyS'r.); basin of water (MBh.); kun.d.ika_ (Pa_n.); kut.am (Ta.); gun.d.i (Ka.); kunju = water jar (Pr.); kun.i = pot (Kt.); kun.d.o_k = wooden milk bowl (Kal.)(CDIAL 3264). kun.d.a = a spring (EI 23, IEG) gun.d.ige (Tbh. of kun.d.ike) = water vessel; gun.d.i = a large round earthen or metal vessel (Ka.); kun.d.i_ = a vessel of stone or earth (M.) (Ka.lex.) gun.d.iga = a large wide-mouthed vase or jar (Te.lex.) **kut.am** = waterpot, hub of a wheel (Ta.); kod.a = earthen pitcher or pot (Ka.); ku_t.a = waterpot (Skt.)(DEDR 1651; CDIAL 3227). **kud.aka** = a cup, a bowl, a small pan, any cup-like or concave thing (Te.lex.) **kut.amu** = a waterpot (Te.lex.) **kod.a** pot (Ka.) **kut.hi, kut.i** (Or. **kut.t.hi**) a mud walled store box for paddy, formerly sometimes found in the houses of Mundas (Mundari.lex.) **kut.t.akam** = cauldron, large vessel with narrow mouth (esp. for treasure)(Ma.); kut.t.uva = big copper pot for heating water (Kod.)(DEDR 1668). **kut.am** = waterpot (Ta.); kod.a = earthen pitcher or pot (Ka.); ku_t.a = waterpot (Skt.)(DEDR 1651; CDIAL 3227). ko_s.t.ha = pot (Kaus'.); granary, storeroom (MBh.); ko_s.t.haka = treasury (Skt.); ko_s.t.hika_ pan (Skt.)(CDIAL 3546). kut.hri_ chamber (B.); kot.hari ((Or.); kothla_ room, granary (H.); kot.hlo wooden box (G.)(CDIAL 3546). kotthali_ sack (Pali); kotthala = bag, grainstore (Pkt.); ku_thli_ satchel, wallet (B.); kuthal.i, kothal.i wallet, pouch (Or.); kothla_ bag, sack, stomach (H.); kothl.o large bag (G.); large sack, chamber of stomach (M.)(CDIAL 3511).

[20] **bari_** = blacksmith, artisan (Ash.)(CDIAL 9464). **bar.ae = bad.ae** (Santali.lex.) **bar.ae** = a blacksmith. "Although their physique, their language and their customs generally point to a Kolarian origin, they constitute a separate caste, which the Mundas consider as inferior to themselves, and the Baraes accept their position with good grace, the more so as no contempt is shown to them. …In every Munda village of some size there is at least one family of Baraes…The ordinary village smith is versed in the arts of iron-smelting, welding and tempering, and in his smithy, which is generally under one of the fine old large trees that form the stereotyped feature of the Mundari village, are forged from start to finish, all the weapons and the instruments and implements the Mundas require. There are of course individuals who succeed better than others in the making of arrows and various kinds of hunting-axes and these attract customers from other villages… they dig the **kut.i** (smelting furnace), they prepare and lay the bamboo tubes through which the air is driven from the bellows to the bottom of the furnace, they re-arrange the furnace after the lump of molten metal has been removed from it, and then the smith starts transforming it into ploughshares, hoes, yoking hooks and rings, arrow-heads, hunting axes of various shapes and sizes, wood axes, knives, his own implements, ladles, neat little pincers to extract thorns from hands and feet, needles for sewing mats and even razors. Formerly, he was also forging swords…susun-**kanda** (dancing-sword)…If it appears too bold to attribute the invention of iron smelting and working to some of the aboriginal inhabitants of this, in many respects so richly blessed part of India (Chota Nagpur), it is certain that no land in the world is better qualified to push man to this invention. The excavations made recently (in 1915) by Mr. Sarat Chandra Roy, the author of the *Mundas and their Country* have shown conclusively, that it was inhabited by man in the stone age, the copper age and the early iron age. Baraes are also found in the villages of Jashpur, Barwai, Biru, Nowagarh, Kolebira and Bano from which the Mundas have been either driven out by the Hindus or crowded out by the Uraons. There they have adopted the Sadani dialect but retained their own social and religious customs. In the districts named above they are called lohar or loha_ra, but in Gangpur they go under the name of Kamar. These Kamars are animists like the Lohars, but they use tanned hides for their single bellows, which they work by bulling, like the blacksmiths in Europe. The Lohars say that is is on account of this that they do not intermarry or eat with them any more. Baraes, Kamars and Lohars must not be confounded with the Aryan blacksmiths also called Lohars. These latter differ not only in race from the first but also in their methods of working. The Aryan blacksmith does not smelt iron, and uses only the single-nozzled hand bellows. He is met with only in such Chota Nagpur villages, where colonies of Hindu or Mohammedan landlords, merchants, money-lenders and native policement require his services, especially to get their bullocks and horses shod…The account the Baraes, Lohars and Kamars generally give of themselves is as follows: they say that they descend from Asura and Asurain, i.e., Asur and his wife, and that they were originally of one and the same caste with the Mundas. In this the Mundas agree with them… If the iron smelters and workers of the legend really belonged to the Munda race then their trade and art must in the beginning have given them a prominent position, such as is held in some ancient races by smiths…Like the Mundas they formerly burnt their dead, the bones of those dying out of their original village were carried back to it in a small earthen vessel into which some pice were

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

placed, and this was then dashed to pieces against a rock in a river…Like the Mundas they practise ancestor worship in practically the same forms. Like them they worship Sin:bon:ga, whom the Lohars call Bhagwan… They also worship Baranda Buru whom the Sadani-speaking lohars call Bar Pahari…**bar.ae-ili** = the rice beer which has been brewed by the whole village, one pot per house, in honour of the Barae, and is drunk with him, at the end of the year; **bar.ae-kud.lam** = a country-made hoe, **bar.ae-mer.ed** = country-smelted iron; in contrast to **cala_ni mer.ed**, imported iron; **bar.ae-muruk** = the energy of a blacksmith." (Mundari.lex., *Encyclopaedia Mundarica*, Vol. II, pp. 410-419).

bar.hi, bar.hi_-mistri_, **bar.u_i_,** bar.u_i_-mistri_ (Sad.H. barha_i_) = a professional carpenter. This class of artisans is not found in purely Munda villages because every Munda knows carpentry enough for all his own purposes; trs. caus., to make somebody become a professional carpenter; intr., to call someone a carpenter; cina ka_m koko bar.hi_akoa? What kind of artisans are called carpenters; bar.hi-n rflx. v., to train oneself for, or to undertake, the work of a professional carpenter; bar.hi_-o, v., to become a professional carpenter; **bar.hi_ kami** = the work, the proession of carpenter, carpentry; bar.hi_-mistri_ a professional carpenter (Mundari.lex.)

bad.ohi = a worker in wood, a village carpenter; **bad.hor.ia** = expert in working in wood; bad.hoe = a carpenter, worker in wood; bad.horia = adj. Who works in wood; (as a scolding to children who use a carpenter's implements) mischievous (Santali.lex.) ba_r. blade of a khukri (N.); badhri_, badha_ru_ knife with a heavy blade for reaping with (Bi.); ba_r.h, ba_r. = edge of knife (H.); va_d.h (G.); ba_r.h = book-binders papercutter (Bi.); brdha_n.u_ = to sheer sheep (WPah.)(CDIAL 11371). vardha a cutting (Skt.); vad.hu a cut (S.)(CDIAL 11372). **vardh-** = to cut (Skt.); **vardhaka** carpenter (R.); bardog, bardox axe (Kho.); wadok (Kal.); wa_t. axe (Wg.); wa_t.ak (Pas'.)(CDIAL 11374). bad.gi, bad.gya_ carpenter (Kon.lex.) bad.hi, bar.hi mistri, bad.hoe, bad.ohi, kat. bad.hoe carpenter (Santali.lex.) bad.agi, bad.a_yi, bad.iga, bad.igi, bad.ige, bad.igya_, bad.d.agi (Tadbhava of vardhaki) a carpenter; bad.agitana carpentry (Ka.lex.) <u>Image: stick</u>: bar.ga, bar.iya stick (Kuwi); bur.ga stick, club; badga walking stick (Kuwi); bar.ga, bad.ga, bad.d.e, bad.d.i, bar.iya, war.iya_ stick (Go.); bar.iya stick (Pa.); vat.i small cane or stick; vat.ippu iron rod (Ta.); vat.i stick, staff, club or armed brahmans, shaft, stroke; vat.ikka to strike; vat.ippikka to have the measure struck (Ma.); bad.i, bad.e, bod.i, bod.e to beat, strike, thrash, bang, pound; <u>n</u>. beating, blow, castration, a short thick stick, cudgel; bad.ike beating; bad.ige stick, staff, cudgel, hammer, mallet; bad.isu to cause to beat; bad.ukatana beating, etc.; ba_y bad.i to prevent one from speaking, silence one (Ka.); bad.i (bad.ip-, bad.ic-) to hammer, pound; ba.y bad.i- to bawl out (Kod..); bad.ipuni, bad.iyuni to strike, beat, thrash; bad.u stick, cudgel (Tu.); bad.ita, bad.iya, bad.e thick stick, cudgel (Te.); bed.ta club; bad.ya walking stick (Kol.); bad.iga big walking stick; bad.ga stick (Kond.a); bad.ge stick, staff (Pe.); bad.ga stick (Mand..); bad.ga_ cudgel, stick; bad.vin.e~ to bruise, beat (M.)(DEDR 5224). **bharia** a carrying stick (Santali.lex.) vad.aga_ a stick, staff (M.); bad.iko_l a staff for striking, beating or pounding; bad.i-man.i an instrument for levelling a surface by beating; **bad.iho_ri** a gelded young bull (Ka.)(Ka.lex.) **vardhaka** =in cmpd. = cutting (Skt.); ci_vara-vad.d.haka = tailor; vad.d.haki = carpenter, building mason; vad.d.hai_ = carpenter (Pkt.); vad.d.haia = shoemaker (Pkt.); ba_d.ho_i_ = carpenter (WPah.); **ba_d.hi** (WPah.); **bar.hai**, bar.ahi (N.); ba_rai (A.); ba_r.ai, ba_r.ui (B.); bar.hai_, bar.ha_i, ba_r.hoi (Or.); bar.ahi_ (Bi.); bar.hai_ (Bhoj.); va_d.ha_ya_ (M.); vad.u-va_ (Si.); vardhaki carpenter (MBh.); vad.d.haki carpenter, building mason (Pali)(CDIAL 11375). vad.hin.i_ cutting (S.); vardhana cutting, slaughter (Mn.)(CDIAL 11377). vad.d.ha_pe_ti cuts (moustache)(Pali); badhem I cut, shear (Kal.); so_r-berde_k custom of cutting an infant's original hair (Kho.); bad.n.o_ to cut, (K.); vad.han.u (S.); vad.d.han. to cut, reap (L.); ba_d.hna_ to cut, shear (H.)(CDIAL 11381). va_d.ho carpenter (S.); va_d.d.hi_, ba_d.d.hi_ (P.)(CDIAL 11568). bed.i_r sledgehammer (Kho.); bad.il (Gaw.); bad.i_r (Bshk.); bad.hi_r axe (Phal.); sledgehammer (Phal.)(CDIAL 11385).

[21] **bara_ha, barha_, ba_riha_, ba_ria_** boar (Or.); ba_ra_h (H.); vara_ (Si.); vara_ha wild boar (Pali.Pkt.RV.); vara_hu (RV.); bara_ boar (A.B.); sow, pig (A.)(CDIAL 11325). Vara_hamu_la name of a place in Kashmir (Ra_jat.); warahmul = a town at west end of the valey of Kashmir (K.)(CDIAL 11326). varaha (Tadbhava of vara_ha), varaha_, vara_ a boar, a hog; a gold coin with a boar-stamp, a pagoda (Ka.); ora, oraha boar (Tadbhava of varaha)(Ka.)(Ka.lex.) varaha_, varaha_si, vara_ boar, hog (Te.); vara_kan- (Ta.); vara_ha (Ma.); varaha_-kat.t.u a brush made of hog's bristle (Ka.); vara_kat.t.e (Te.); vara_ha a boar, a hog;

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

the third or boar-incarnation of Vis.n.u; vara_ha-timmappa the Venkat.araman.a of Tirupati (Ka.)(Ka.lex.) vara_kam boar, swine (Tiruva_ca. 30); the boar-incarnation of Vis.n.u, one of taca_vata_ram; vara_kan- id.; pagoda, a gold coin = 3 1/2 rupees, as bearing the image of a boar; arhat; vara_kan-et.ai weight of a pagoda, a unit of weight = 5/16 rupee = 54 gms. (Ta.lex.) bir sukri the wild pig, sus indicus (Santali.lex.) a_ru hog (Skt.); airia_s. (Dm.)(CDIAL 1321). vara_ki va_ra_ki, a divine energy (Tiruppu. 179); vajra-vara_hi a godess worshipped by the Jains (Ta.lex.)

Homonyms for **bar.ea**:

bar.i-daru, **bar.e-daru** (Sad. bar.) *ficus bengalensis*, Linn. Urticaceae, the banyan, a tall, spreading rree with numerous aerial roots, which if not browsed by cattle, form new stems **bar.e**, variant of **bar.i**, the banyan tree; in songs it is bar.e, not bar.i which is used. (Mundari.lex.)

baria~o, ba~r.ia~ = a shopkeeper, a peddler who sells salt, spices, tobacco; baria~u = rich, great, powerful, arrogant (Santali.lex.) **van.ika** (Skt. Van.ik) a trader, a merchant; a grocer; a grain-vendor (G.lex.) va_n.iyo (Dh.Des. va_n.iyaya_ fr. Skt. va_n.iya-ka_ traders) = a Bania, an individual of a particular caste in Gujarat, the members of which are generally traders, shop-keepers, or money-lenders; a trader, a merchant; a dealer in grain (G.lex.) van.aja_r = a caravan; a camp or company of traveling merchants; a number of bullocks laden with corn, salt and other merchandise; van.ajaro = a traveling merchant who carries for sale goods in a caravan (G.lex.) van.ij = trader (RV); trade (Gaut.); van.i = trader (Pkt.); van.ic, va~r.ic = to sell (Ash.); vra_le (Kt.)(CDIAL 12230)

[22] Alternative homonyms: *sike* spit (Santali) *sikwar* to give way, crack (of earthen pots)(Santali) *kiccu* fire (Ta.Ga.); *kis* (Kol.Go.); *ciccu* fire, flame (Te.); *cicc* fire (Kur.); *cicci_* fire (Pkt.)(DEDR 1514).

s'i_kh is the rod used to hold the gimlet or grinding rock (hard rock such as jasper or agate or carnelian) is made of copper. *s'i_kh* a pointed iron bar; a hollow pointed iron bar use to draw out grain etc. from a bag; *s'ikha_* the crest; peacock (G.)

s'i_kum (Skt. *s'ikya*) a sling for suspending things on (G.) *s'in:gi_* horned, having horns; *s'in:ga* [Dh.Des. *s'iggu*] a horn, a trumpet; *s'in:gad.i_* a small horn (G.) *sikuar, sikwar* a sling slung to each end of a pole in which things are carried (Santali)

Substantive: *sikol, sikri* a chain; *sikr.i makr.i* marriage bonds; *makr.i, makor.i* an earring *sikil* to polish, to burnish, to make bright as iron on a grindstone; *san sikil kedae* he ground and polished (Santali)

Glyph: *hig- (hikt-)* to lower head (Pe.); *sika (siki-)* to bend the head down (Kui); *hikali* to crouch; *hikk-* to hand the head (Kuwi)(DEDR 2493).

[23] **Upside down, birth**

put.t.ha = upside down, having the face downward (P.lex.)
put.t.u = birth, origin; progeny (Ka.)

Depicting kamar sa_la_ (blacksmith's workshop) or, 'saloi kamar' = a kind of blacksmith (perhaps, knife grinder) [**sala** = afterbirth, kamar]

[Note the glyph of a woman with spread thighs and something (placenta? menses? dead foetus?) emanating from the womb].

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

sa_l afterbirth (N.); cause of pain (G.); dead foetus in womb (M.); hal = afterbirth (K.); s'alya = anything lodged in the body and causing pain (applied to dead foetus)(Sus'r.); salla = thorn in body (Pkt.)(CDIAL 12332).

Some glyphs on Text 4304, rebus:

Alternative 1: **kut.t.a_r, kut.a_r** = corn without grains (Go.); kut.t.a_ = chaff (Kur.)(DEDR 1665). kuta = jowari stubble (Go.); gut.t.u = stubble of paddy (Pe.)(DEDR 1676). *khut.t.a, *khun.t.a (CDIAL 3893, 3746). gundli = a cultivated millet, panicum miliare (Santali.lex.) Rebus: **kut.ha_ru** = armourer, writer (Skt.)

Alternative 2: **ko_li** a stubble of jo_l.a (Ka.); **ko_le** = a stub or stump of corn (Te.)(DEDR 2242). kol, kolhe = an aboriginal tribe of iron smelters speaking a language akin to that of the Santals (Santali.lex.) **kol** 'metal' (Ta.)

Pictorial motif on side b of tablet h180: a woman with legs spread out, accent on pubes: **kut.hi**; rebus: **kut.hi** = a furnace for smelting iron ore].

[24] **kundi, kundiyamu** = a sort of rim of stone placed upon a mortar to prevent spilling of rice (Te.lex.) kundau dhiri = a hewn stone; kundau murhut = a graven image (Santali.lex.) **kur..a, kud.a, kur..u, gur..a, gur..u** a piece of iron used for the ran.t.e (and kun.t.e), a ploughshare (Ka.) ***khut.** pin (N.); **khu~t.i_** wooden pin (M.)(CDIAL 3893); **khun.t.a** peg (Pkt.); **khu~_t.a_** stump, stake, post, peg (H.); **khu~_t.i_** peg (H.); **khu~t.a_, khu~t.i_** stake, peg (M.)(CDIAL 3893). **<u>Pin</u>**: **khu~t.a_** pin, wedge, stake, wooden post (B.); **khut.nu** to stitch (N.); **khut.a_** peg, post (Mth.); **khu~t.a_** stake; **khu~t.i_** wooden pin (M.)(CDIAL 3893). **gu_n.t.a, gun.t.i, gun.t.e, gu_n.t.ige** peg, pin, stake (Tu.); **gun.t.a, gu_n.t.a, ku_t.a** peg, plug (Ka.); **gud.ida** id., stumpy post (Ka.)**; gu.t.a** peg, post (Kod..); **gu_t.amu** stake, post, peg (Tu.); **gud.ide** hinge, peg, pivot (Te.); **kut.t.a** pillar, post (Go.)(DBIA 104).

[25] Other homonyms: **d.hon.d.** = a big wood pigeon (P.lex.)

dondhor.o, dondkor.o squatting, cowering, sitting close to the ground (Santali)

d.on.d.o polled, as an ox or buffalo (G.)

d.on.d.obot to salute by bowing down *(Santali)*

d.ondor a cave, *den; don.d.hor* a hole, a hollow; d.od.hio hollow; *d.od.hor* a hole, a hollow; a cavity, hollow (Santali)

d.on.t.ho, dhon.t.ho, dhon.t.o a knot (Santali)

dod.o = an ear of corn (G.lex.)

dhon.d.ra khalak a large leaf cup; *d.hon:ga* 'a dugout, a boat made from a hollowed out tree, a wooden trough' (Santali) *don* 'a wooden trough' (Santali)

[26] **nakar..-tal** to creep, crawl along (**Kampara_. Atika_. 136**)(Ta.)(Ta.lex.) **na_ga, na_gara, na_gala** a snake, especially the coluber or <u>cobra capella</u> (Ka.)(Ka.lex.) **na_ga** snake (S'Br.NiDoc.); **n.a_ya** (Pkt.); **nay, na_, naya_** snake (Si.); **na_ga-danta** elephant tusk, ivory < snake-shaped tusk (Skt.); **na_ga** (Pali); **n.a_ya** (Pkt.); **n** (Gypsy); **naa** euphem. term for snake (Or.); **na_ng** (Bshk.); **non.** (Kt.Pr.); **nhon.** name of a god (Kal.)[<? Pers. **nahang**](CDIAL 7039). **na_kam** cobra (**Man.i. 25,195**); serpent (**Kampara_. Kalan-ka_n.. 37**)(Ta.)(Ta.lex.) **s'is'una_ka** young snake (R.); young elephant (Skt.); **susva_l.** crocodile (G.)(CDIAL 12477).

[27] Alternative homonyms: tebr.a = three (Santali)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

t**a_mbum** = copper (G.); ta_mra (Skt.); ta_mba_ na_n.um = copper coin; ta_mba_ va_d.ako = a porringer made of copper; ta_mba_ kun.d.i_ a copper trough in which water for bathing is kept; ta_mbad.i_ = a copper pot (G.)

[28] **kum.ta** spear (Pkt.); **kundu** spike of a top (S.); **kundi_** spike at the bottom of a stick (S.); **kundir.i_, kundiri_** spike of a spear or stick (S.); **kutu** lance (Si); **konta** standard (Pali); **kom.ta** spear (Pkt.); **ko~t** spear, dart (H.); **kota** spear, spire, standard (Si.)(CDIAL 3289). < Perh. Greek **kontos** spear. **kauntika** a spearman, lancer; **kunta** a lance (Skt.lex.) **kuntam < kunta** javelin for throwing; barbed dart (**Ci_vaka. 1678**); spear, lance (**Pu. Ve. 4,7**); pike, stake (**Mullaip. 41**)(Ta.lex.) **kunta, konta** = a lance, spear (Ka.lex.) kundena, **kundi** = a barbed dart (Te.lex.) kuntam = spear (Ta.lex.)**kund- (kunt-)** to punch with fist, pierce with spear (Pe.); **kutkaha_** to strike one another with fists (Pe.); **kut-** to push with fist (Mand..); **kund- (kunt-)** to pierce, prod (Mand..); **kuta (kuti-)** to prick; n. act of pricking (Kui); **kuttinai** to stab, stitch; **kut- (-it-)** to prick (Kuwi); **xutting** to dig, probe (Br.)(DEDR 1719). **khu~ca_na_** to prick (B.); **khu~ci** inserting new thatch in old (B.); **khu~cvu~** to pierce (G.); **khu~c** indentation (G.)(CDIAL 3890). **khor.an.u** to drive into (S.)(CDIAL 3802).

[29] *kut.t.am* depth, pond (Ta.); *kut.t.* a large pit (Kui); *kun.d.a* pit, round hole in ground for sacred fire (Skt.)(DEDR 1669). *kun.d.a* a reservoir of water surrounded with steps to go down to the bottom (G.) **ku~n.d.** a pit, a pitfall, a hot spring; norok ku~n.d. hell (Santali) kon.d., kon.d.a_, pit (Kon.); kun.d.a, kon.d.a = a hole in the ground, a pit (Ka.); kon.d.aban.d.i = a cart used at the kon.d.a feast; kon.d.ahabba = a feast in honour of Vi_rabhadra at which Lin:gavantas carry an idol of Vi_rabhadra and dance with it on live coals in a pit (Ka.); kun.d.a = a pit, especially of sacrificial fire; kon.d.a = a pit, hole; tu_takon.d.a = a fire-pit (Tu.); kon.d.upa_runi to run away with; kon.d.upo_pini = to take away, convey; kon.d.ubarpini = to bring; kon.d.opini, kon.opini id. (Tu.lex.)

[30] **tamba** = copper; tambar.a = a copper coloured gem of inferior value; a copper vessel with a wide mouth; tambesar, tamesar = a variety of copper; tabitia = one who writes amulets (P.lex.) **ta_mbum** = copper; ta_mbad.i_ = a copper pot (G.lex.) **ta_mbra, ta_mbara** = copper (Ka.lex.) **ta_mra** copper; a coppery red colour, made of copper (VS 16.6 ta_mro arun.ah) (Vedic.lex.) **tamba** = copper; tamro = a precious stone (Santali.lex.) **tambabica**, copper-ore stones (Mundari.lex.) **tamba** red, copper (Pali); **tamba** adj. and n. (Pkt.); **tambira** copper, red coloured (Pkt.); **tra_m** copper (K.); **tamba_** (Or.)(CDIAL 5779). **tamaut.e, tamot.e** = coppersmith (N.)(CDIAL 5781). **tamher.a_** = brass-founder (Bi.); **tamher.i_** round copper vessel (Bi.)(CDIAL 5781, 5782). **ta_mbara_** coppersmith (Or.)(CDIAL 5780). **ta_bulu** a tinsel; the cut as of a precious stone; **ta_bulu ka_ji** an artistic bangle; **ta_mba_n.o** a metallic dish (Tu.lex.) **ta_mbt.i** coppersmith (Kon.lex.) cf. **tampit.i, tampat.i < damri** (H.) cash, a small coin = 1/12 anna (Ta.lex.) cf. **damad.i, dammad.i** a ka_su, the fourth part of a dud.d.u or paisa (Ka.); **damad.i_** (M.H.)(Ka.lex.) tambige, cembige, tambagi, tambuge = kamat.ha, kalas'a, kut.a, cambu, a water-pot (Ka.); id. (Te.); cf. ta_mraka (Ka.lex.) ta_mraka = copper; ta_mrika = made of copper (Skt.); ta_mbra = ta_mbara Tbh. of ta_mra; ta_mrakut.t.aka = a brazier or coppersmith (Ka.lex.) **tabuku** = a tray, slaver, plate, platter (Te.lex.) ta_marasa = red lotus (MBh.); lotus (Pkt.); copper (Skt.)(CDIAL 5774). ta_mra copper (Kaus'.); ta_mraka copper (Ya_j.); ta_m copper (Bshk.); ta_mba copper (Phal.); ta_mba_ copper (Sh.); tra_m copper (K.Sh.); t.ra_mo copper (S.); tra_ma_, tara_ma~_ (L.); ta_mba_ (P.); t.l.a_m (WPah.); ta~_bo_ (WPah.); ta_mo pl. young bamboo shoots (N.); ta_m (A.); ta~_ba_, ta_ma_ (B.); tamba_ (Or.); ta_m, ta_ma_ (Mth.); ta_ma_ (Bhoj.); ta_m in compounds, ta~_ba_, ta_ma_ (H.); tra~_bu~, ta~_bu~ (G.); ta~_be~ (M.); ta_mbe copper (Konkan.i); tama, tam copper (Si.)(CDIAL 5779). ca_mba, cambo copper (WPah.)(CDIAL 5779). ta_ram a copper coin, 12 pice of 13 fanam (Ma.); ta_ra a copper coin of 2 ka_su (Ka.); two pie (Tu.)(DEDR 3168). teb copper (To.); cambu, cembu, combu copper (Ka.); cembi copper (Kod..); cembu brass, copper (Tu.); cempu copper (Ma.); copper, gold (Ta.)(DEDR 2775). Copper, red: cempan- brown-coloured cow or bull (Ta.)(DEDR 2775). tambavan copper-coloured, dark red (Si.); ta_mravarn.a copper-coloured (TA'r.)(CDIAL 5790).ta_mrapat.t.a copper plate (for inscribing)(Ya_j.); ta_mra-pattra id. (Skt.); ta~_bot.i_ piece of copper of shape and size of a brick (M.); tamot^{i} copper plate (Ku.)(CDIAL 5786-7). Coppersmith: ta_mbara_ coppersmith (Or.)(CDIAL 5780). tamaut.e, tamot.e coppersmith (N.); ta_mrakut.t.a coppersmith (R.)(CDIAL 5781). tamher.a_ brass-founder (Bi.)(CDIAL 5783).

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

[31] **asita** = name of a black snake (AV iii.27.1; v.13.5.6; vi.56.2; Taittiri_ya Sam.hita_ v.5.10.1; Maitra_yan.i_Sam.hita_ iii.14.18; Va_jasneyi Sam.hita_xxiv.37). If **ahi** denotes a snake (Vedic), it may be homonymous with **asi** which denotes the sacrificial kife (RV i.162.20; x.79.6; 86.18; AV ix.3.9; x.1.20)); it also means a knife used in war (AVxi.9.1). Note ismade of a sheath (vavri--Ka_t.haka Sam.hita_xv.4 to which a belt (va_la--Maitra_yan.i_ Sam.hita_ii.6.5) was attached. An asi-dha_ra_ is a 'sheath' (Jaimini_ya Upanis.ad Bra_hman.a iii.139). But, va_l.=sword (Ta.); and va_l= tail (a ligature in Harappan pictographs, which may denote a sword or, perhaps, a sheath linked with another pictograph denoting a weapon)."Snake" is also a pictograph in Sarasvati epigraphs; in a pair, two snakes may denote a double-edged knife.

[32] 1438.Implement for turning up clods: kusa_ hand implement for turning up clods (a pole with an iron blade or head)(M.); kusi_ a tool made of iron (Pkt.); kus'i_ small wooden pin used to mark in recitation (MaitrS.); small wooden pin made of metal (S'Br.); ploughshare (Skt.); kus'ika (Skt.); kus'a_ pin for marking in recitation (Pa_n..); kus'ika_ piece of wood used as a splint for a broken limb (Car.); kuhi_, kahi_ mattock (L.); kahi_ (P.); kusi_, kusiya_ ploughshare; kus, kussa_mattock (H.); kas', kos' iron instrument for digging; koslu~ bar of iron attached to a plough (G.); kos'iya_l.o wooden wedge holding ploughshare in wooden frame of plough (G.)(CDIAL 3367). kus'e a plank for covering anything; a piece of wood (Ka.lex.) cf. ku_ci, ku_cu (pl. ku_ckul) crowbar (Pa.); gusi id. (Ga.); ku_nj (pl. ku_sk) hoe, shouldered digging stick; ku_nj crowbar; ku_ysa_ id., ploughshare (Go.)(DEDR 1879). kor..u bar of metal, bullion (Ta.); koru (Tu.); cf. kus. (Skt.) kus. to plough, make furrows; to draw, drag, pull, drag away, tear; to draw towards oneself, attract; to plough, till; caus.: to draw out, tear up; to extract; to plough, till, cultivate; kus.aka attractive, drawing; ploughing; a ploughman, husbandman; kus.akam a ploughshare; kus.a_n.ah., -kr.s.ikah. a ploughman, husbandman; kr.s.i ploughing; agriculture, husbandry; kr.s.i-karman agriculture; kr.s.i-ji_vin living by husbandry; kr.s.i-kalam agricultural produce or profit; kr.s.i-se_va_ agriculture, husbandry; kr.s.i_vala one who lives by husbandry, a farmer; kr.s.t.a drawn, pulled, dragged, attracted etc.; ploughed; kr.s.t.a-upta sown on cultivated ground; kr.s.t.a-pacya, -pa_kya ripening in cultivated ground; cultivated; kr.s.i-phalam the product of a harvest; kr.s.t.i drawing, attracting; ploughing, cultivating the soil (Skt.lex.) kus'a ploughshare; kus'ika a ploughshare (Skt.lex.) kus. to tear, extract, pull or draw out (Skt.lex.) cf. guju to pull, contract, move convulsively (Ka.); gunju drag, to pull (Te.)(DEDR 1648). Crowbar, digging stick; ploughshare: gusi crowbar (Ga.); ku_ci, ku_cu (pl. ku_ckul) crowbar (Pa.); ku_nj (pl. ku_sk) hoe, shouldered digging stick; crowbar (Go.); ku_ysa_ crowbar, ploughshare (Go.)(DEDR 1879). a~_kus'i_ hooked stick (M.); akussa elephant goad (Si.)(CDIAL 111).

1451a.Ploughshare: kus'i ploughshare (Skt.); kus'ika_ piece of wood used as a splint for a broken limb (Car.); kusa_ hand implement for turning up clods (a pole with an iron blade or head)(M.)(CDIAL 3367). kos to plough (Kon.lex.) kuci pit for erecting a flagstaff (Ci_vaka. 143); flagstaff (Ta.lex.)

1438.Implement for turning up clods: kusa_ hand implement for turning up clods (a pole with an iron blade or head)(M.); kusi_ a tool made of iron (Pkt.); kus'i_ small wooden pin used to mark in recitation (MaitrS.); small wooden pin made of metal (S'Br.); ploughshare (Skt.); kus'ika (Skt.); kus'a_ pin for marking in recitation (Pa_n..); kus'ika_ piece of wood used as a splint for a broken limb (Car.); kuhi_, kahi_ mattock (L.); kahi_ (P.); kusi_, kusiya_ ploughshare; kus, kussa_mattock (H.); kas', kos' iron instrument for digging; koslu~ bar of iron attached to a plough (G.); kos'iya_l.o wooden wedge holding ploughshare in wooden frame of plough (G.)(CDIAL 3367). kus'e a plank for covering anything; a piece of wood (Ka.lex.) cf. ku_ci, ku_cu (pl. ku_ckul) crowbar (Pa.); gusi id. (Ga.); ku_nj (pl. ku_sk) hoe, shouldered digging stick; ku_nj crowbar; ku_ysa_ id., ploughshare (Go.)(DEDR 1879).kassa_ mattock; kassi_ small mattock; kussi_ (H.)(CDIAL 2906).

[33] **bod.e** = an inferior kind of han.d.i (liquor); bodoc mela, bod.oc sod.oc = the liquor obtained by squeezing the malted grain, and being refuse is of an inferior quality; bod.oc han.d.i = liquor obtained by pouring water on the malted grain and squeezing it (Santali.lex.)

[34] bhagal.a, bhagada_l.um, bhopa_l.um = a hole; a bore (G.lex.) [Note: glyph, dotted circle] bagarage, bagarige, bagerage = a hole dug for water in the dry bed of a river or steam, a spring (Ka.lex.) bagge = spot,

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

mark (Te.lex.) bakhola = a cleft in a tree; a hollow in a tree; a hole (G.lex.) pagad.e = a mark on a die (Ka.); pagad.a_ (M.); pakat.ai (Ta.); pagad.e, pagid.e (Ma.); pagad.e = an ace on a die (Te.); a die (or cowry) for playing a kind of back-gammon; a piece used at play (Te.); [cf. Skt. vat.aka_); pagad.e = the play itself (Ka.); pagad.eya ka_yi = a piece used in playing pagad.e; pagad.eya letta = a die (or cowry) at pagad.e; pagad.eya sa_lu = the line of squares a player's pieces have to cross to arrive at the center of a dice-cloth or board (Ka.lex.)

bagat.u = to disjoin the thighs, to open the legs, to straddle (Ka.); vaku = to dive, separate (Ta.Ma.)(Ka.lex.)

[35] **men~ca** = fish roe (Or.) matsya fish (RV); maccha, macchi_ fish (Pali); **me_c** (Nin:g); mechli_ (Pah.); ma_chali_ (Omarw.); maci (Kt.)(CDIAL 9758). **man~chari_** fisherman (L.)(CDIAL 9762).

men~ca_ = lump (Or.) men.d.a_ = lump, clot (Or.) mede = a crude mass (Ka.) meduka = greasiness or dirt in the hair, clottedness (Te.) [Rebus: me_n.d.ha = ram (Skt.)(CDIAL 10310). Note the glyph of 'fish' ligatured on a copper anthropomorph which is orthographically a depiction of the curved horns of a ram.]

maccu, maca-ppon-, maccam = piece of gold kept as a sample (Ta.); macca, maccu = little piece of gold or silver taken by the goldsmith from what was given to him and returned to the owner to be kept as a sample or test (Ka.); macca id. (Tu.); maccu = the touch of precious metals, specimen, standard, quality (Te.)(DEDR 4629).

matsya = a mole on the body (M.); masa_ wart, mole (H.); maja, maje a natural speck, spot, mole (Tu.)(DEDR 4632)

[36] Alternative homonyms:

marada = a man, a male; a hero, a brave or warlike man; marada_i_, marada_nagi_ = manliness, bravery, virility; marada_ni_ = manly, bold; maradi_ = boldness, manliness, valour; marade-a_dmi_ = a gentleman; a respectable man (G.lex.) *maran:* = great, large, big, to become great; first born, principal, head, chief; *ad.i maran:* sadom = a very big horse (Santali)

marud.iyo = one who makes and sells wristlets, and puts wristlets on the wrists of women (G.lex.)

marad.a = twisting; a twist; a turn; marad.avum = to twist, to turn; marad.a_vum = to bend; marod.a = a twist, a turn; writhing, a bend; marod.avum = to writhe, to twist, to contort; to bend (G.lex.)

marud.i_ = a hut, a cottage (G.lex.)

man.d.a_ = warehouse, workshop (Kon.lex.)

man.d.a = a branch; a twig (Te.lex.)

hil.l.i, hil.l.e = a branch, a shoot, a rootlet; hil.l.iyod.e = shoots to break forth (Ka.lex.) **vi_l.ya** (Tbh. of vi_t.a) the betel-leaf pepper, piper betel (Ka.lex.) **cilla** small branch of a tree; illi twig (Ma.); **cil.l.e** bifurcation (Ka.); **cella, jella** branch, bough (Pa.); **cil** branch of a tree, tine of antlers, tributary of river (Ko.)(DEDR 2587).

il.a_ a curved instrument for cutting grass (M.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

hila_ shoulder, hand (Pkt.lex.)

hillola = a wave, surge; hilati = to sport amorously, dally, wanton, express amorous inclination (Dha_tup. 28.69) (Skt.lex.)

hillola = a particular form of sexual union; hi_la, hi_laka = semen virile (Skt.lex.) hel = membrum virile; hel mel hona_ = to mingle, to be mixed (P.lex.)

hil.alu, hin.i = a bullock's or bull's hump (Ka.lex.)

hi_la_ = [Arabic hilah] occupation, work, employment; hi_la_ wasi_la_ employment and protection, one by whose aid employment is obtained (P.lex.)

illa = watchman, servant (Pkt.lex.)

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com